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July 16, 2015

NSR Program Manager Wyoming Department of Environmental Quality (WDEQ) Air Quality Division Herschler Building 2-E 122 West 25th Street Cheyenne, WY 82002

Re:

#### WDEQ Permit Application

ONEOK Bakken Pipeline, L.L.C. – Temporary Diesel Generators and Tanks at the Aladdin Booster Station
Hulett, Crook County, Wyoming

Dear Sir or Madam,

ONEOK Bakken Pipeline, L.L.C (ONEOK) owns and operates the Aladdin Booster Station, located in Section 5, Township 54N, Range 61W, approximately twenty (20) miles east of Hulett, Crook County, Wyoming. The Aladdin Booster Station is a natural gas liquids (NGL) booster station for the Bakken Pipeline. The station consists of three (3) electric pumps, one (1) pig receiver, one (1) pig launcher and one (1) flare, along with various other valves and piping components, which have been permitted under the WDEQ Permit Waiver wv-14981-6.

ONEOK proposes to construct and operate eleven (11), EPA Tier 4 certified, temporary diesel generators (one (1) Cummins QSB5-G9: 129 kW/173 hp; seven (7) Cummins QSB7-G6: 234 kW/314 hp, and three (3) Cummins QSL9-G8: 323 kW/433 hp) at the Aladdin Booster Station. ONEOK also proposes to construct and operate four (4) 2,500 gallon diesel storage tanks to provide fuel to the generators. These generators are already in temporary operation at the booster station, permitted under the WDEQ Permit Waiver P0017278, which expires on August 27, 2015 (90 days from the notified start of operation). ONEOK seeks to extend the operation of these engines and tanks for a period of 180 days through this construction permit application.

The Cummins QSB5-G9: 129 kW generator will be used to provide power to the buildings and other areas of the booster station for 180 days, by which time an external power line/alternative power source will be operational. The seven (7) Cummins QSB7-G6: 234 kW and three (3) Cummins QSL9-G8: 323 kW generators will be used to provide power to run the pumps at the booster station for 180 days, by which time an external power line/alternative power source will be operational.

Due to the temporary nature of operation of these generators and tanks, the emissions from these generator engines and tanks have not been aggregated with existing emissions. Note that even if the emissions from all potential sources at the Booster Station are aggregated, the emissions from the



facility are less than the major source thresholds for both Prevention of Significant Deterioration (PSD) and Title V permitting.

Please find enclosed the emission calculations, supporting documentation and WDEQ construction permit application forms for the proposed temporary diesel generators and tanks. This construction permit application is intended to cover the construction and operation of all temporary power generators at the Aladdin Booster Station<sup>1</sup>.

Considering the temporary nature of usage and the exigent need for these generators at the booster station, ONEOK requests an expedited construction permit from the WDEQ, thereby enabling the immediate usage of these generators<sup>2</sup> for temporary power supply purposes.

If you have any questions regarding this application, please feel free to contact me at (580) 395-6322. Alternatively, Ms. Kim Ayotte of Trinity Consultants can be reached at (720) 638-7647.

Sincerely,

ONEQK BAKKEN PIPELINE, L.L.C.

Patrick Allison

Environmental Engineer, Pipelines

Enclosed:

Cc: Ms. Kim Ayotte, Trinity Consultants (Denver)

<sup>&</sup>lt;sup>1</sup> This construction permit will replace the permit waiver P0017278.

<sup>&</sup>lt;sup>2</sup> ONEOK would like to commence operation with these temporary generators prior to the expiration of the Permit Waiver P0017278 (which expires on August 27, 2015).



## NEW SOURCE REVIEW CONSTRUCTION PERMIT APPLICATION

ONEOK Bakken Pipeline, L.L.C. Aladdin Booster Station - Temporary Power Generators

Prepared By:

Patrick Allison - Environmental Engineer

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Kim Ayotte – Senior Consultant Hari Krishna Bharadwaj – Consultant

> TRINITY CONSULTANTS 1391 N Speer Blvd, Suite 350 Denver, CO 80204 (720) 638-7647

> > July 2015

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ONEOK Bakken Pipeline, L.L.C. (ONEOK) is submitting this new source review construction permit application to construct and operate eleven (11) temporary diesel generators and associated diesel storage tanks at the Aladdin Booster Station. The Aladdin Booster Station is located in Section 5, T54N, R61W, approximately twenty (20) miles east of Hulett, in Crook County Wyoming.

The Aladdin Booster Station is a natural gas liquids (NGL) booster station for the Bakken Pipeline, which consists of approximately 500 miles of pipeline transporting NGL from Sydney, Montana to the existing Overland Pass Pipeline in Weld County, Colorado. On May 22, 2015 a permit waiver (P0017278) was issued for the temporary use of eleven (11) EPA Tier 4i certified, diesel generator engines as well as four (4) 2,500 gallon diesel storage tanks to provide diesel fuel to the generators. The permit waiver (P0017278) was issued for a period of 90 days from the start of operation and expires on August 27, 2015. Due to exigencies in obtaining an external power line/alternative power source, ONEOK seeks to extend the operation of these engines and tanks for a period of 180 days through this construction permit application.

This permit application for operating these temporary generators will not affect the issued permit waivers for the booster station operations and will be its own stand-alone permit for the operation of these temporary generator engines.

#### 1.1. PROPOSED PROJECT

ONEOK proposes to construct and operate the following temporary sources at the Aladdin Booster Station:

- 1) One (1), 173 hp Cummins QSB5G9 diesel fired generator engine
- 2) Seven (7) 314 hp Cummins QSB7G6 diesel fired generator engines
- 3) Three (3) 433 hp Cummins QSL9G8 diesel fired generator engines
- 4) Four (4) 2,500 gallon diesel storage tanks

The diesel generators will be used to provide power to run the pumps and provide power to buildings at the booster station. The usage of these generator engines are needed on an exigent basis since the booster stations operations have commenced and an external power line to the station to provide power to run the motors for the pumps has not yet been installed. ONEOK plans to use these engines for approximately 180 days or less, from the date of issuance of the permit, since it is anticipated that an external power line/alternative power source to the plant will be installed and completed within that time-frame. The vapor pressure of diesel in these tanks is low and as demonstrated in Section 3, these tanks are insignificant sources of hazardous air pollutant (HAP) and Volatile Organic Compounds (VOCs).

#### 1.2. PERMITTING CONSIDERATIONS

Due to the temporary nature of these generator operations, ONEOK requests the Wyoming Department of Environmental Quality (WDEQ) permit this unit separately from the Aladdin Booster Station. Consequently, the emissions from these engines and associated tanks are not aggregated with emissions from other sources at the Aladdin Booster Station. The emissions from these generator engines and tanks are shown in Table 1-1.

Note that even if the emissions from all potential sources at the Booster Station are aggregated as shown in Table 1-2, the emissions from the facility are less than the major source thresholds for both Prevention of Significant Deterioration (PSD) and Title V permitting. Consequently, a PSD review is not required for this

application. Neither a Title V permit application, nor an operating permit, will be required for these generators. The generator engines and associated tanks will be a minor source for permitting purposes for both of the aforementioned programs.

Therefore, ONEOK requests the WDEQ grant a construction permit for the proposed temporary generators and associated storage tanks. ONEOK also respectfully requests expedited processing from the WDEQ to enable the immediate usage of these generator engines for temporary purposes.

Table 1-1. Potential Emission Summary – Eleven (11) EPA Tier 4i Certified Engines and Four (4) Diesel Storage Tanks

		N	0 <sub>X</sub>	C	)	V	70C	HA	\P	Pi	М		SO <sub>2</sub>
ID	Source	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Gen 1	Cummins QSB5-G9	0.6	1.2	1.0	2.2	0.4	0.9	0.0	0.0	0.01	0.01	0.35	0.77
Gen 2 to Gen 8	Cummins QSB7-G6	7.2	15.6	12.6	27.3	5.5	12.0	0.1	0.1	0.07	0.01	4.51	9.73
Gen 9 to Gen 11	Cummins QSL9-G8	4.3	9.2	7.5	16.2	3.3	7.1	0.0	0.1	0.04	0.10	2.66	5.75
Tanks	Diesel Fuel Tanks 1,2,3 and 4	-	-	-		0.0	0.0	0.0	0.0	-	-	-	3.73
То	otal Facility Emissions	12.1	26.1	21.1	45.6	9.2	20.0	0.1	0.2	0.1	0.3	7.5	16.3

Table 1-2. Emission Summary - All Potential Sources at the Booster Station

Pollutant	Uncontrolle Emiss	sions	Title V Major Source Thresholds	PSD Major Source Thresholds	Title V Major? (Y or N)	PSD Major? (Y or N)
Pollutant	(lb/hr)	(tpy)	(tpy)	(tpy)		
PM	0.12	0.26	100	250	N	N
PM <sub>10</sub>	0.12	0.26	100	250	N	N
PM <sub>2.5</sub>	0.12	0.26	100	250	N	N
$SO_2$	7.52	16.25	100	250	N	N
$NO_X$	14.16	26.16	100	250	N	N
VOC	31.75	25.18	100	250	N	N
CO	32.91	45.90	100	250	N	N
Total HAPs <sup>1</sup>	0.11	0.26	25	N/A	N	N/A

<sup>&</sup>lt;sup>1</sup> Hazardous Air Pollutants (HAPs)

#### 1.3. PERMIT APPLICATION

This permit application was prepared in accordance with Wyoming Air Quality Standards and Regulations (WAQSR) Chapter 6, Section 2 and Oil and Gas guidance<sup>1</sup>. This application includes the following:

- Section 2: Process Description, Process Flow Diagram and Area Map;
- Section 3: Emission Calculations and Supporting Documentation;
- Section 4: Best Available Control Technology (BACT) Requirements;
- Section 5: Regulatory Analysis;
- > Section 6: Ambient Air Quality Analysis;
- Section 7: WDEQ Forms; and
- > Appendix A: Manufacturer Specification Sheets.

<sup>&</sup>lt;sup>1</sup> Chapter 6, Section 2 Permitting Guidance – Revised September 2013

ONEOK Bakken Pipeline, L.L.C. | Aladdin Booster Station - Temporary Power Generators Permit Application

#### 2.1. PROCESS DESCRIPTION

#### 2.1.1. Process Description

The proposed temporary generator engines will be used for providing power to the motors of the pumps at the booster station. Information on the engines, manufacturer, rating, usage and other information is given below in Table 2-1:

Table 2-1. Proposed Temporary Generators

Engine ID	Engine Description	Engine Configuration	Rating (hp)	Tier	Usage
Diesel Gen 1	Cummins QSB5-G9	Turbocharged and Charge Air Cooled and EGR	173	US EPA Tier 4(i)	Power for buildings at the Booster Station
Diesel Gen-2 - Gen-8	Cummins QSB7-G6	Turbocharged and Charge Air Cooled and EGR	314	US EPA Tier 4(i)	Power for pumps at the Booster Station
Diesel Gen-9 - Gen- 11	Cummins QSL9-G8	Turbocharged and Charge Air Cooled and EGR	433	US EPA Tier 4(i)	Power for pumps at the Booster Station

The simplified process flow diagram is shown in Figure 2-1 and area map in Figure 2-2.

Figure 2-1. Process Flow Diagram

Diesel Temporary To Aladdin Booster Station Diesel Generators (Gen 11)

ONEOK Bakken Pipeline, L.L.C. Temporary Diesel Generators for Pumps - Permit Application

Process Flow Diagram

Aladdin Booster Station

Trinity © Consultants

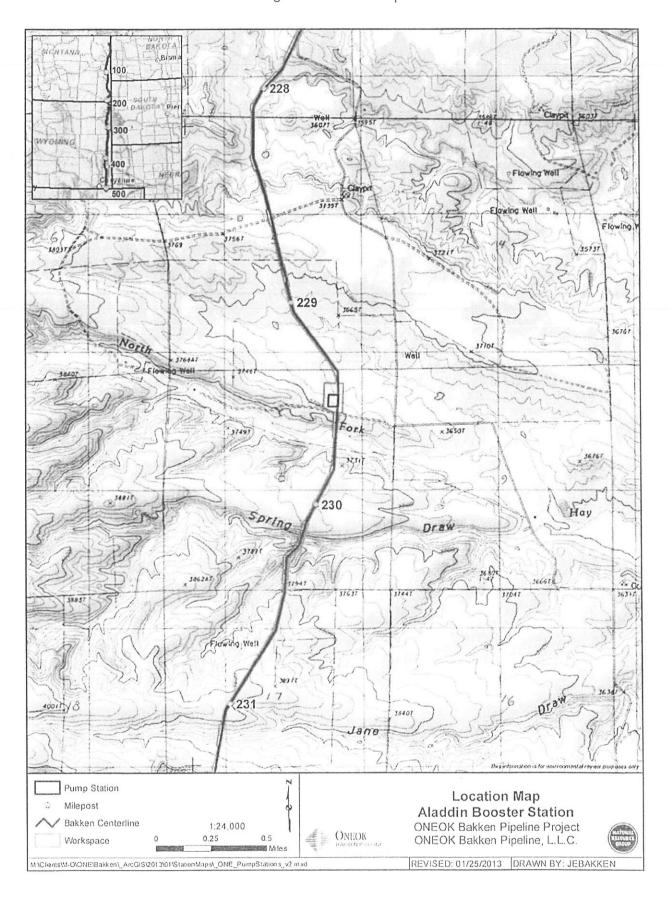
Raw Material Air Emissions

Legend:

July 2015

### Figure 2-2. Area Map

Figure 2-2. Area Map



### 3. EMISSION CALCULATIONS

This section summarizes the criteria pollutant and hazardous air pollutant (HAP) calculation methodologies and provides emission calculations for the temporary diesel generator engines at the facility.

Combustion of diesel will result in nitrogen oxides ( $NO_X$ ), carbon monoxide (CO), sulfur dioxide ( $SO_2$ ), particulate matter (PM), particulate matter with aerodynamic diameter below 10 microns ( $PM_{10}$ ), particulate matter with aerodynamic diameter below 2.5 microns ( $PM_{2.5}$ ), volatile organic compounds (VOC) and HAP emissions.

The emission factors for  $NO_X$ , VOC, CO and PM are obtained from testing these engines in accordance with 40 CFR 1065, US EPA Nonroad Tier 4(i) regulations. The  $PM_{10}$  emission represents total PM (i.e., filterable plus condensable) and is assumed to equal PM and  $PM_{2.5}$ . VOC emission factor is conservatively assumed to be the same as the Hydrocarbons (HC) emission factor.  $SO_2$ , and individual HAP emission factors are obtained from U.S. EPA AP-42, Chapter 3, Section 3, Tables 3.3-1 and 3.3-2.2

Emissions (working and breathing losses) from the diesel storage tanks have been estimated using Tanks 4.09d.

Detailed emission calculation spreadsheets, including example calculations, are included at the end of this section.

<sup>&</sup>lt;sup>2</sup> U.S. EPA AP-42 Section 3, Table 3.3-1 and Table 3.3-2 (Emission Factors for Gasoline and Diesel Industrial Engines, October 1996)

# DIESEL ENGINE - EMISSIONS

173 hp 1 129 kW 1 Source ID = Diesel Gen-1 Engine Make and Model = Cummins QSB5-G9 Fuel Type = Diesel EPA Tier Standard = US EPA Tier 4(i) Number of Generators: Design Power Output = Estimated Maximum Heat Input = Design Power Output =

Avg Break Specific Fuel Consumption =

Btu/hp-hr3 hrs/yr1 1.21 4,320 7,000.0 Annual Operating Hours =

MMBtu/hr<sup>2</sup>

Pollutant /			Estimated Poter	Estimated Potential Emissions 4,5	Total Estimated Potential Emissions 9	ed Potential
Speciated Organics	Emission Factor	Units	(lb/hr)	(tpy)	(lb/hr)	(tpy)
NO <sub>x</sub>	2.00	g/kW-hr 7	0.57	1.23	0.57	1.23
00	3.50	g/KW-hr 7	1.00	2.15	1.00	2.15
PM/PM <sub>10</sub> /PM <sub>25</sub> 6	0.020	g/kW-hr <sup>7</sup>	0.01	1.23E-02	0.01	0.01
$SO_2$	2.05E-03	lb/hp-hr <sup>8</sup>	0.35	0.77	0.35	0.77
Total HC (VOC)	0.36	lb/MMBtu 8	0.44	0.94	0.44	0.94
Benzene	9.33E-04	Ib/MMBtu input B	1.13E-03	2.44E-03	<0.01	<0.01
Toluene	4.09E-04	lb/MMBtu input 8	4.95E-04	1.07E-03	<0.01	<0.01
Xylene	2.85E-04	lb/MMBtu input 8	3.45E-04	7.45E-04	<0.01	<0.01
1,3-Butadiene	3.91E-05	1b/MMBtu input 8	4.74E-05	1.02E-04	<0.01	<0.01
Formaldehyde	1.18E-03	1b/MMBtu input 8	1.43E-03	3.09E-03	<0.01	<0.01
Acetaldehyde	7.67E-04	lb/MMBtu input 8	9.29E-04	2.01E-03	<0.01	<0.01
Acrolein	9.25E-05	lb/MMBtu input 8	1.12E-04	2.42E-04	<0.01	<0.01
Total PAH	1.68E-04	lb/MMBtu input <sup>8</sup>	2.03E-04	4.39E-04	<0.01	<0.01
	To	Fotal HAPs	4.69E-03	0.01	4.69E-03	0.01
					-	-

<sup>1</sup> Ratings per Engine Performance Data Sheet for Cummins Power Generation Engine QSB5-G9. The hours of operation were calculated assuming 24 hours of operation per day for 180 days. <sup>2</sup> Estimated Maximum Heat Input (MMBtu/hr) = AP-42 Average break-specific fuel consumption (Btu/hp-hr) x Power Output (hp) / 10 -06

Estimated Maximum Heat Input = 7000 Btu 173 hp = = Estimated Maximum Heat Input =

1.21 MMBtu hr

> 10000001 <sup>3</sup> Average Break Specific Fuel Consumption taken from AP-42, Section 3.3, Table 3.3-1, Footnote c.

<sup>4</sup> Hourly Emission Rate (lb/hr) = Design Power Rating (hp) x Emission Factor (g/hp-hr) x 453.59 lb/g Design Power Rating (kW) x Emission Factor (g/kW-hr) x 453.59 lb/g

Maximum Heat Input (MMBtu/hr) x Emission Factor (Ib/MMBtu) Design Power Rating (hp) x Emission Factor (lb/hp-hr)

0.57 lb 1.23 tpy ŀ. Annual Emissions (tpy) = Hourly Emissions (lb/hr) x Annual Operating Hours (hrs/yr) x 1 / 2,000 (lb/ton) 453.892 g 2000 ton 1 lb 129 kW 4320 hr Yr 2.00 g 0.57 lb kW-hr Hourly Emissions NO<sub>X</sub> (lb/hr) = Annual Emissions NO<sub>X</sub> (tpy) =

<sup>6</sup> All particulate matter is assumed to be less than 10 µm, therefore the emission factor and the calculated emissions are the same for PM and PM<sub>10</sub>. PM<sub>10</sub>/PM<sub>2.5</sub> is assumed to equal PM.

Finission Factors per QSB5-G9 engine tested in accordance with 40 CFR 1065 US EPA Nonroad Tier 4(i) Regulations.

<sup>8</sup> Emission factors are taken from AP-42, Chapter 3, Section 3, Table 3.3-1 (Emission Factors for Gasoline and Diesel Industrial Engines October 1996), Table 3.3-2 (Speciated Organic Compound Emission Factors for Uncontrolled Stationary Diesel Engines).

Total emission calculations = Estimated Potential Emissions x Number of Generators

ONEOK Bakken Pipeline, L.L.C. (ONEOK) | Aladdin Booster Station - Temporary Generator Operations (180 days) Trinity Consultants

# DIESEL ENGINE - EMISSIONS

Btu/hp-hr<sup>3</sup> MMBtu/hr<sup>2</sup> hrs/yr 1 234 kW <sup>1</sup> 314 hp <sup>1</sup> Source ID = Diesel Gen-2 · Gen-8 Engine Make and Model = Cummins QSB7-G6 US EPA Tier 4(i) Diesel 7,000.0 2.20 EPA Tier Standard = Number of Generators:
Design Power Output = Fuel Type = Design Power Output = Estimated Maximum Heat Input = Annual Operating Hours = Avg Break Specific Fuel Consumption =

Pollutant /			Estimated Poten	Estimated Potential Emissions 4,5	Total Estimated Potential Emissions 9	ed Potential
Speciated Organics	Emission Factor	Units	(lb/hr)	(tpy)	(lb/hr)	(tpy)
NOx	2.00	g/kW-hr 7	1.03	2.23	7.22	15.60
00	3.50	g/KW-hr 7	1.81	3.90	12.64	27.30
PM/PM <sub>10</sub> /PM <sub>2.5</sub> 6	0.020	g/kw-hr	0.01	2.23E-02	0.07	0.16
502	2.05E-03	lb/hp-hr <sup>8</sup>	0.64	1.39	4.51	9.73
Total HC (VOC)	0.36	lb/MMBtu 8	0.79	1.71	5.54	11.96
Benzene	9.33E-04	lb/MMBtu input <sup>8</sup>	2.05E-03	4.43E-03	0.01	0.03
Toluene	4.09E-04	lb/MMBtu input <sup>B</sup>	8.99E-04	1.94E-03	<0.01	0.01
Xylene	2.85E-04	lb/MMBtu input	6.26E-04	1.35E-03	<0.01	<0.01
1,3-Butadiene	3.91E-05	lb/MMBtu input B	8.59E-05	1.86E-04	<0.01	<0.01
Formaldehyde	1.18E-03	lb/MMBtu input <sup>B</sup>	2.59E-03	5.60E-03	0.02	0.04
Acetaldehyde	7.67E-04	lb/MMBtu input <sup>8</sup>	1.69E-03	3.64E-03	0.01	0.03
Acrolein	9.25E-05	lb/MMBtu input <sup>8</sup>	2.03E-04	4.39E-04	<0.01	<0.01
Total PAH	1.68E-04	lb/MMBtu input <sup>8</sup>	3.69E-04	7.98E-04	<0.01	<0.01
	To	Total HAPs	0.01	0.02	90.0	0.13

Ratings per Engine Performance Data Sheet for Cummins Power Generation Engine QSB7-GG. The hours of operation were calculated assuming

24 hours operation per day for 180 days.

1MBtu <sup>2</sup> Estimated Maximum Heat Input (MMBtu/hr) = AP-42 Average break-specific fuel consumption (Btu/hp-hr) x Power Output (hp) / 10 -<sup>16</sup>

aximum Heat Input = 7000 Btu 314 np 1	hp-hr 1000000	AD 42 Canting
i	hp-hr	C

4 Hourly Emission Rate (lb/hr) = Design Power Rating (hp) x Emission Factor (g/hp-hr) x 453.59 lb/g <sup>3</sup> Average Break Specific Fuel Consumption taken from AP-42, Section 3.3, Table 3.3-1, Footnote c.

Design Power Rating (kW) x Emission Factor (g/kW-hr) x 453.59 lb/g

Design Power Rating (hp) x Emission Factor (lb/hp-hr)

	П
Factor (Ib/MMBtu)	1 lb
t (MMBtu/hr) x Emission	234 kW
Maximum Heat Inpu	2.00 g
	ions NO <sub>x</sub> (Ib/hr) =

1.03 lb	hr		2.23 tpy	
П			11	
1 lb	453.892 g	rs/yr) x 1 / 2,000 (lb/ton)	1 lb	2000 ton
234 kW		Annual Operating Hours (hr	4320 hr	.N.
2.00 g	kW-hr	Hourly Emissions (lb/hr) x A	1.03 lb	hr
Hourly Emissions NO <sub>x</sub> (Ib/hr) =		5 Annual Emissions (tpy) = Hourly	Annual Emissions NO <sub>X</sub> (tpy) =	

<sup>3</sup> All particulate matter is assumed to be less than 10 µm, therefore the emission factor and the calculated emissions are the same for PM and PM<sub>10</sub>. PM<sub>10</sub>/PM<sub>25</sub> is assumed to equal PM.

<sup>9</sup> Total emission calculations = Estimated Potential Emissions x Number of Generators

ONEOK Bakken Pipeline, L.L.C. (ONEOK) | Aladdin Booster Station - Temporary Generator Operations (180 days) Trinity Consultants

<sup>&</sup>lt;sup>a</sup> Emission factors are taken from AP-42, Chapter 3, Section 3, Table 3.3-1 (Emission Factors for Gasoline and Diesel Industrial Engines 7 Emission Factors per QSB5-G9 engine tested in accordance with 40 CFR 1065 US EPA Nonroad Tier 4(i) Regulations.

October 1996), Table 3.3-2 (Speciated Organic Compound Emission Factors for Uncontrolled Stationary Diesel Engines).

# DIESEL ENGINE - EMISSIONS

Btu/hp-hr<sup>3</sup> MMBtu/hr<sup>2</sup> hrs/yr1 323 kW 1 433 hp 1 Source ID = Diesel Gen-9 - Gen-11 Engine Make and Model = Cummins QSL9-G8 Diesel EPA Tier Standard = US EPA Tier 4(i) 4,320 7,000.0 3.03 Fuel Type = Number of Generators: Estimated Maximum Heat Input = Design Power Output = Design Power Output = Annual Operating Hours = Avg Break Specific Fuel Consumption =

Pollutant /			Estimated Poter	Estimated Potential Emissions 4,5	Total Estimated Potential Emissions 9	d Potential	
Speciated Organics	Emission Factor	Units	(lb/hr)	(tpy)	(lb/hr)	(tpy)	
NO <sub>X</sub>	2.00	g/kW-hr 7	1.42	3.08	4.27	9.23	
00	3.50	g/KW-hr 7	2.49	5.38	7.48	16.15	
PM/PM <sub>10</sub> /PM <sub>2.5</sub> 6	0.02	g/kW-hr 7	0.01	3.08E-02	0.04	60.0	
SO <sub>2</sub>	2.05E-03	lb/hp-hr <sup>8</sup>	68'0	1.92	2.66	5.75	
Total HC (VOC)	0.36	lb/MMBtu 8	1.09	2.36	3.27	7.07	
Benzene	9.33E-04	lb/MMBtu input 8	2.83E-03	6.11E-03	<0.01	0.02	
Toluene	4.09E-04	lb/MMBtu input 8	1.24E-03	2.68E-03	<0.01	<0.01	
Xylene	2.85E-04	lb/MMBtu input 8	8.64E-04	1.87E-03	<0.01	<0.01	
1,3-Butadiene	3.91E-05	lb/MMBtu input 8	1.19E-04	2.56E-04	<0.01	<0.01	
Formaldehyde	1.18E-03	lb/MMBtu input 8	3,58E-03	7.73E-03	0.01	0.02	
Acetaldehyde	7.67E-04	lb/MMBtu input 8	2.32E-03	5.02E-03	<0.01	0.02	
Acrolein	9.25E-05	lb/MMBtu input 8	2.80E-04	6.06E-04	<0.01	<0.01	
Total PAH	1.68E-04	lb/MMBtu input 8	5.09E-04	1.10E-03	<0.01	<0.01	
	To	Total HAPs	0.01	0.03	0.04	0.08	
		The state of the s					

<sup>1</sup> Ratings per Engine Performance Data Sheet for Cummins Power Generation Engine QSL9-G8. The hours of operation were calculated assuming 24 hours operation per day for 180 days.

3.03 MMBtu <sup>2</sup> Estimated Maximum Heat Input (MMBtu/hr) = AP-42 Average break-specific fuel consumption (Btu/hp-hr) x Power Output (hp) / 10<sup>-06</sup> 433 hp 7000 Btu Estimated Maximum Heat Input =

10000001 <sup>3</sup> Average Break Specific Fuel Consumption taken from AP-42, Section 3.3, Table 3.3-1, Footnote c.

'n

or Design Power Rating (kW) x Emission Factor (g/kW-hr) x 453.59 lb/g 4 Hourly Emission Rate (lb/hr) = Design Power Rating (hp) x Emission Factor (g/hp-hr) x 453.59 lb/g

Design Power Rating (hp) x Emission Factor (lb/hp-hr)

Maximum Heat Input (MMBtu/hr) x Emission Factor (Ib/MMBtu)

3.08 tpy 1.42 lb hr  $^{5}$  Annual Emissions (tpy) = Hourly Emissions (lb/hr) x Annual Operating Hours (hrs/yr) x 1 / 2,000 (lb/ton) 453.892 g 323 kW 4320 hr 2.00 € 1.42 lb kW-hr Hourly Emissions NO<sub>x</sub> (lb/hr) = Annual Emissions NO<sub>X</sub> (tpy) =

<sup>6</sup> All particulate matter is assumed to be less than 10 μm, therefore the emission factor and the calculated emissions are the same for 2000 ton Yr.

Emission Factors per QSB5-69 engine tested in accordance with 40 CFR 1065 US EPA Nonroad Tier 4(i) Regulations. PM and PM<sub>10</sub>. PM<sub>10</sub>/PM<sub>25</sub> is assumed to equal PM.

Emission factors are taken from AP-42, Chapter 3, Section 3, Table 3.3-1 (Emission Factors for Gasoline and Diesel Industrial Engines October 1996), Table 3.3-2 (Speciated Organic Compound Emission Factors for Uncontrolled Stationary Diesel Engines).

 $^{9}$  Total emission calculations = Estimated Potential Emissions x Number of Generators

ONEOK Bakken Pipeline, L.L.C. (ONEOK) | Aladdin Booster Station - Temporary Generator Operations (180 days) Trinity Consultants

# STORAGE TANK - EMISSIONS

Storage Tank Emissions

Storage Tank Physical Characteristics and Emissions - Diesel Tanks

ID	Contents	Tank Capacity (gal)	Tank Capacity Net Throughput <sup>1,2,3,4</sup> (gal)	Tank Orientation	Tank Diameter (ft)	Tank Height (ft)	PTE Em (lb/hr)	PTE Emissions <sup>5</sup> b/hr) (tpy)
Fuel Tank 1 - Dedicated to Gen 1 (129 kW)	Diesel	2500	36,720	Vertical Fixed Roof Tank	8	ω	9.47E-05	4.15E-04
Fuel Tank 2 - Dedicated to Gen 2 to Gen 5 (234 kW)	Diesel	2500	66,528	Vertical Fixed Roof Tank	8	8	1.39E-04	6.10E-04
Fuel Tank 3 - Dedicated to Gen 6 to Gen 8 (234 kW)	Diesel	2500	66,528	Vertical Fixed Roof Tank	ω	8	1.39E-04	6.10E-04
Fuel Tank 4 - Dedicated to Gen 6 to Gen 8 (323 kW)	Diesel	2500	93,312	Vertical Fixed Roof Tank	88	8	1.76E-04	7.70E-04
					Total VOC Total HAP	Total VOC Emissions Total HAP Emissions <sup>6</sup>	0.001	0.002

Since temporary generator Gen 1 is being permitted for maximum of 4,320 hrs/yr and have a fuel consumption of 8.5 gal/hr at 100 % load, turnover of 14.7 per year was calculated as a conservative engineering estimate.

<sup>2</sup> Since temporary generators Gen 2 to Gen 5 are being permitted for maximum of 4,320 hrs/yr and have a fuel consumption of 15.4 gal/hr at 100 % load, turnover of 26.6 per year was calculated as a conservative engineering estimate.

<sup>3</sup> Since temporary generators Gen 6 to Gen 8 are being permitted for maximum of 4,320 hrs/yr and have a fuel consumption of 15.4 gal/hr at 100 % load, turnover of 26.6 per year was calculated as a conservative engineering estimate.

<sup>4</sup> Since temporary generators Gen 8 to Gen 11 are being permitted for maximum of 4,320 hrs/yr and have a fuel consumption of 21.6 gal/hr at 100 % load, turnover of 37.3 per year was calculated as a conservative engineering estimate.

<sup>&</sup>lt;sup>5</sup> Emissions (Working+Breathing Losses) obtained from Tanks4.09d.

<sup>&</sup>lt;sup>6</sup> All HAP emissions are conservatively assumed to be equal to VOC emissions.

# Fuel Tank 1

# TANKS 4.0.9d

# Emissions Report - Detail Format Tank Indentification and Physical Characteristics

Identification

Back-up Diesel Storage Tank for temporary generators - Aladdin Booster Station Wyoming ONEOK Bakken Pipeline, L.L.C. Back-up Diesel Storage Tank Vertical Fixed Roof Tank User Identification: Type of Tank: Description: Company: City: State:

 Tank Dimensions
 8.00

 Shell Height (ft):
 8.00

 Diameter (ft):
 7.00

 Liquid Height (ft):
 7.00

 Avg. Liquid Height (ft):
 4.00

 Volume (gallons):
 14.70

 Net Throughput(gal/yr):
 36,750.00

Liquid Height (ft):

Avg. Liquid Height (ft):

Avg. Liquid Height (ft):

Volume (gallons):

Turnovers:

Net Throughput(gal/yr):

Net Throughput(gal/yr):

Net Throughput(gal/yr):

Nof Toolor/Shade:

Shell Color/Shade:

Shell Co

Shell Color/Shade: White/White Shell Condition Roof Color/Shade: Good White/White Roof Condition: Good White/White Good Type: Cone Cone Height (ft) Slope (#/ft) (Cone Roof) 0.00

Meterological Data used in Emissions Calculations: Rapid City, South Dakota (Avg Atmospheric Pressure = 13.11 psia)

-0.03

Breather Vent Settings Vacuum Settings (psig): Pressure Settings (psig)

# TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

Back-up Diesel Storage Tank - Vertical Fixed Roof Tank Aladdin, Wyoming

			Basis for Vanor Pressure	Calculations	Option 1: VP40 = .0031 VP50 = .0045
			Mol	Weight	188.00
		Vapor	Mass	Fract.	
Section of the sectio		Liquid	Mass	Fract.	
The second secon		Vapor	Mol.	Weight.	130.0000
			(psia)	Max.	0.0054
-			Pressure (	Min.	0.0034
			Vapor	Avg.	0.0043
	Liquid	Bulk	Temp	(deg F)	46.55
		urf.	3g F)	Max.	54.57
		Daily Liquid Surf.	mperature (deg	Min.	42.13
		Da	Tem	Avg.	48.35
				Month	All
				Mixture/Component	Distillate fuel oil no. 2

# **Emissions Report - Detail Format** Detail Calculations (AP-42) TANKS 4.0.9d

Back-up Diesel Storage Tank - Vertical Fixed Roof Tank Aladdin, Wyoming

	0.3394 205.2507 0.0001 0.0445 0.9991	205,2507 8,0000 4,0833 8,0000 4,0000 0,0833	0.0833 0.0000 0.0000 0.0625 4.0000	0.0001 130,0000 0.0043 508,0208 46,5292 10,731 506,2192 0,1700 1,348,0802	0.0445 24.8789 0.0020 0.0600 0.0043 0.0034 0.0054 508.0208 501.8011 514.2406 25.8417	0.9991 0.0043 4.0833
Annual Emission Calcaulations	Standing Losses (lb): Vapor Space Volume (cu ft): Vapor Density (lb/cu ft): Vapor Space Expansion Factor: Vaned Vapor Saturation Factor:	Tank Vapor Space Volume. Vapor Space Volume (cu ft): Tank Diameter (ft): Vapor Space Outage (ft): Tank Shell Height (ft): Average Liquid Height (ft): Roof Outage (ft):	Roof Outage (Cone Roof) Roof Outage (fl): Roof Height (fl): Roof Slope (flft): Shell Radius (fl):	Vapor Density (blcu ft): Vapor Density (blcu ft): Vapor Density (blcu ft): Vapor Pressure at Daily Average Liquid Surface Temperature (psai): Daily Average Ambient Temp. (deg. R): Daily Average Ambient Temp. (deg. F). Ideal Gas Constant R (psai cutt / (b-mol-deg R)): Liquid Bulk Temperature (deg. R): Tank Panti Solar Absorphance (Shell): Tank Panti Solar Absorphance (Shell): Tank Panti Solar Absorphance (Bell): Daily Total Solar Insulation Factor (Btu/sqft day):	Vapor Space Expansion Factor Vapor Space Expansion Factor Daily Vapor Pressure Range (deg. R): Daily Vapor Pressure Range (psia): Breather Vent Press. Setting Range(psia): Vapor Pressure at Daily Average Liquid Surface Temperature (psia): Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia): Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia): Daily Avg. Liquid Surface Temp. (deg. R): Daily Min. Liquid Surface Temp. (deg. R): Daily Min. Liquid Surface Temp. (deg. R): Daily Max. Liquid Surface Temp. (deg. R): Daily Max. Liquid Surface Temp. (deg. R): Daily Max. Liquid Surface Temp. (deg. R):	Vented Vapor Saturation Factor Vented Vapor Saturation Factor: Vapor Pressure a loally Average Liquid: Surface Temperature (psia): Vapor Space Outage (ft).

6/25/2015

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6/25/2015

Working Losses (lb):	0.48
Vapor Molecular Weight (Ib/Ib-mole):	130.000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia)	00.00
Annual Net Throughput (gallyr.):	36,750.000
Annual Turnovers:	14.700
Turnover Factor:	1.000
Maximum Liquid Volume (gal):	2.500.000
Maximum Liquid Height (ft):	7.000
Tank Diameter (ft):	8.000
Working Loss Product Factor:	1.000

TANKS 4.0 Report

130.0000	0	36,750.0000	14.7000	1.0000	2,500,0000	7.0000	8.0000	

0.8250

Total Losses (lb):

# TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: Annual

Back-up Diesel Storage Tank - Vertical Fixed Roof Tank Aladdin, Wyoming

Components Working Loss	2222(102)
	Breathing Loss Total Emission
Distillate fuel oil no. 2 0.49	0.34

# Fuel Tank 2 and Fuel Tank 3

# Tank Indentification and Physical Characteristics **Emissions Report - Detail Format TANKS 4.0.9d**

Identification	
User Identification:	Back-up Diesel Storage Tank
City:	Aladdin
State:	Wyoming

Back-up Diesel Storage Tank for temporary generators - Aladdin Booster Station 8.00 8.00 7.00 2,500.00 26.50 ONEOK Bakken Pipeline, L.L.C. Vertical Fixed Roof Tank Net Throughput(gal/yr): Is Tank Heated (y/n): Liquid Height (ft) : Avg. Liquid Height (ft): Volume (gallons): Shell Height (ft): Diameter (ft): City: State: Company: Type of Tank: Description: Tank Dimensions Turnovers:

White/White Good White/White Good Cone Slope (ft/ft) (Cone Roof) Shell Condition Roof Color/Shade: Roof Condition: Paint Characteristics Shell Color/Shade: Roof Characteristics Type: Height (ft)

0.00 -0.03 Breather Vent Settings Vacuum Settings (psig): Pressure Settings (psig) Meterological Data used in Emissions Calculations: Rapid City, South Dakota (Avg Atmospheric Pressure = 13.11 psia)

6/25/2015

TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

Back-up Diesel Storage Tank - Vertical Fixed Roof Tank Aladdin, Wyoming

					Liquid								
		Da	Daily Liquid Surf.	JT.	Bulk				Vapor	Liquid	Vapor		
		Tem	emperature (deg	3g F)	Temp	Vapo	Pressure (psia)	psia)	Mol.	Mass	Mass	Mol.	Basis for Vapor Pressure
Mixture/Component	Month	Avg.	Min.	Max.	(deg F)	Avg.	Min.	Max.	Weight,	Fract.	Fract.	Weight	Calculations
Distillate fuel oil no. 2	All	48.35	42.13	54.57	46.55	0.0043	0.0034	0.0054	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045

# Emissions Report - Detail Format Detail Calculations (AP-42) TANKS 4.0.9d

Back-up Diesel Storage Tank - Vertical Fixed Roof Tank Aladdin, Wyoming

Standing Losses (lb): Vapor Space Volume (cu ft): Vapor Density (lb/cu ft):	0.3394
Vapor Space Expansion Factor: Vented Vapor Saturation Factor:	0.0445
Tank Vapor Space Volume: Vapor Space Volume (cu ft): Tank Diameter (ft): Vapor Space Outage (ft): Vapor Space Liquid Height (ft): Average Liquid Height (ft): Roof Outage (ft):	205,2507 8,0000 4,0833 8,0000 4,0000 0,0833
Roof Outage (Cone Roof) Roof Outage (ft): Roof Feight (ft): Roof Slope (ft/ft): Shell Radius (ft):	0.0833 0.0000 0.0625 4.0000
Vapor Density (b/cu ft): Vapor Molecular Weigh ((b/lb-mole))	0.0001
Vapor Pressure a Daily Average Liquio Varface Temperature (psia): Daily Avg. Liquid Surface Temp. (deg. R): Daily Average Ambient Temp. (deg. F):	0.0043 508.0208 46.5292
Ideal (Gas Constant R (psia cutf (Ib-mol-deg R)): Liquid Bulk Temperature (deg, R): Tank Paint Solar Absorptance (Shell): Tank Paint Solar Absorptance (Roof):	10.731 506.2192 0.1700 0.1700
Factor (Btu/sqft day):	1,348,0802
Vapor Space Expansion Factor Vapor Space Expansion Factor: Daily Vapor Temperature Range (deg. R): Daily Wapor Pressure Range (psia): Vapor Pressure Range (psia): Vapor Pressure Range (psia): Vapor Pressure Range (psia):	0.0445 24.8789 0.0020 0.0600
Vapori recognic at Darij Averago Liverio Surface Temperature (psia): Vanor Presente at Darij Minimum Livuid	0.0043
Surface Temperature (psia): Vapor Pressure at Daily Maximum Liquid	0.0034
Surface Temperature (psia): Daily Ayg, Liquid Surface Temp, (deg R): Daily Min. Liquid Surface Temp, (deg R): Daily Max. Liquid Surface Temp, (deg R): Daily Max. Liquid Surface Temp, (deg R):	0.0054 508.0208 501.8011 514.2406 25.6417
Vented Vapor Saturation Factor Vented Vapor Saturation Factor: Vanor Pressure at Daily Average I in uid:	0.9991
Surface Temperature (psia): Vapor Space Outage (ft):	0.0043

6/25/2015

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6/25/2015

Working Losses (lb):	0.8787
Vapor Molecular Weight (Ib/Ib-mole):	130.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	0.0043
Annual Net Throughput (gal/yr.):	66,500,0000
Annual Turnovers:	26,6000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	2,500,0000
Maximum Liquid Height (ft):	7.0000
Tank Diameter (ft):	8.0000
Working Loss Product Factor.	1.0000

TANKS 4.0 Report

# TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

**Emissions Report for: Annual** 

Back-up Diesel Storage Tank - Vertical Fixed Roof Tank Aladdin, Wyoming

		Losses(lbs)	
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.88	0.34	1.22
	the state of the s	The second secon	

# Fuel Tank 4

# TANKS 4.0.9d

# Emissions Report - Detail Format ank Indentification and Physical Characteristics

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Identification

Back-up Diesel Storage Tank Aladdin Wyoming ONEOK Bakken Pipeline, L.L.C. Vertical Fixed Roof Tank Back-up Diesel Storage Tank for temporary generators - Aladdin Booster Station	8.00 8.00 7.00 7.00 4.00 2,500.00 37.30 93,250.00	White/White Good White/White Good
User Identification: City: State: Company: Type of Tank: Description:	Tank Dimensions Shell Height (ft): Diameter (ft): Liquid Height (ft): Avg. Liquid Height (ft): Volume (gallons): Turnovers: Net Throughput(gal/yr): Is Tank Heated (y/n):	Paint Characteristics Shell Color/Shade: Shell Condition Roof Color/Shade: Roof Color/Shade:

Meterological Data used in Emissions Calculations: Rapid City, South Dakota (Avg Atmospheric Pressure = 13.11 psia)

-0.03

0.00

Cone

Type: Height (ft) Slope (ft/ft) (Cone Roof)

Roof Characteristics

Breather Vent Settings Vacuum Settings (psig): Pressure Settings (psig) 6/25/2015

TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

Back-up Diesel Storage Tank - Vertical Fixed Roof Tank Aladdin, Wyoming

Basis for Vapor Pressure	Calculations	Option 1: VP40 = .0031 VP50 = .0045
Mol.	Weight	188.00
Vapor Mass	Fract.	
Liquid Mass	Fract.	
Vapor Mol.	Weight.	130.0000
(psia)	Max.	0.0054
Pressure	Min.	0.0034
Vapor	Avg.	0.0043
Liquid Bulk Temp	(deg F)	46.55
Surf. (deg F)	Max.	54.57
Daily Liquid Si emperature (de	Min.	42.13
Da	Avg.	48.35
	Month Avg.	All
	Mixture/Component	Distillate fuel oil no. 2

# **Emissions Report - Detail Format** Detail Calculations (AP-42) TANKS 4.0.9d

# Back-up Diesel Storage Tank - Vertical Fixed Roof Tank Aladdin, Wyoming

Annual Emission Calcaulations	
Standing Losses (lb):	0.3394
Vapor Density (Ib/cu ft):	09.2907
Vapor Space Expansion Factor:	0.0445
Vented Vapor Saturation Factor:	0.9991
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	205.2507
Tank Diameter (ft):	8.0000
Vapor Space Outage (ft):	4.0833
lank Shell Height (II).	8.0000
Average Liquid neignt (ft): Roof Outage (ft):	0.0833
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.0833
Roof Height (fl):	0.0000
Roof Slope (ft/ft):	0.0625
Vapor Density	*000
Vapor Density (Ib/cu it.): Vapor Molecular Weight (Ib/Ib-mole):	130,000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	0.0043
Daily Avg. Liquid Surface Temp. (deg. R):	508.0208
Daily Average Ambient Temp. (deg. F.):	46.5292
(psia cuft / (lb-mol-dea R)):	10.731
Liquid Bulk Temperature (deg. R):	506.2192
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation	
Factor (Btu/sqft day):	1,348,0802
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0445
Daily Vapor Temperature Range (deg. R):	24.8789
Daily Vapor Pressure Range (psia):	0.0020
Breather Vent Press, Setting Range(psia):	0.0600
Surface Temperature (psia):	0.0043
Vapor Pressure at Daily Minimum Liquid	
Surface Temperature (psia):	0.0034
Surface Temperature (nais):	0.0054
Daily Ava. Liquid Surface Temp. (deg R):	508.0208
Daily Min. Liquid Surface Temp. (deg R):	501.8011
Daily Max. Liquid Surface Temp. (deg R):	514.2406
Daily Ambient Temp, Range (deg. R):	25.6417
Vented Vapor Saturation Factor: Vented Vapor Saturation Factor:	0.9991
Vapor Pressure at Daily Average Liquid. Surface Temperature (psia):	0.0043
Vapor Space Outage (ft):	4.0833

6/25/2015

6/25/2015

Working Lasses (lb):	1,1964
Vapor Molecular Weight (Ib/Ib-mole):	130.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	0.0043
Annual Net Throughput (gal/yr.):	93,250,0000
Annual Turnovers:	37,3000
Turnover Factor:	0.9710
Maximum Liquid Volume (gal):	2,500,0000
Maximum Liquid Height (ft):	7.0000
Tank Diameter (ft):	8.0000
Working Loss Product Factor:	1.0000
Total Joseph (Ib)	4 5359
otal Losses (ID).	0000

TANKS 4.0 Report

# TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: Annual

Back-up Diesel Storage Tank - Vertical Fixed Roof Tank Aladdin, Wyoming

		Losses(lbs)	
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	1.20	0.34	1.54

### 4. BACT REQUIREMENTS

A Best Available Control Technology (BACT) analysis is required to satisfy the emissions control requirements in permits for air emission sources, covered in Chapter 6 Section 2(c)(v) of the WDEQ-AQD Standards and Regulations.

The diesel generator engine (Diesel Gen 1) is EPA Tier 4i (interim) certified and falls under the category of engines which are rated between 75 kW  $\leq$  kW <130 kW and manufactured in 2011. This limits their emissions of NO<sub>X</sub> + HC to 4.0 g/kW-hr. It also limits the emissions of CO and PM to 3.50 g/kW-hr and 0.02 g/kW-hr, respectively.

The diesel generator engines (Diesel Gen 2-8 and Diesel Gen 9-11) are EPA Tier 4i (interim) certified and fall under the category of engines which are rated between 225 kW  $\leq$  kW <450 kW and manufactured in 2011. This limits their emissions of NO<sub>X</sub> + HC to 4.0 g/kW-hr. It also limits the emissions of CO and PM to 3.50 g/kW-hr and 0.02 g/kW-hr, respectively.

Compliance with Tier 4i emission standards via a tier certified engine is proposed as BACT for  $NO_x$ , CO, and VOC for these temporary generator engines. The diesel engines will emit  $SO_2$  due to the thermal oxidation of sulfur in the fuel oil. The use of ultra-low sulfur diesel (less than 15 ppm of sulfur) is proposed as  $SO_2$  BACT for these temporary generator engines.

This section addresses the applicability of the federal and state regulatory programs for the proposed temporary generator engines and associated tanks at the Aladdin Booster Station.

#### 5.1. WYOMING STATE REGULATIONS

#### 5.1.1. WAQSR Chapter 3, Section 2 (C3 S2)

The generator engines and associated tanks proposed at the Aladdin Booster Station will comply with the opacity requirements of this section:

Visible emissions of any containment discharged into the atmosphere from any single new source of emission whatsoever as determined by a qualified observer shall be limited to 20 percent opacity;

### 5.1.2. WAQSR Chapter 6, Section 2 (C6 S2)

ONEOK is submitting this construction application in accordance with C6 S2(a) for an emission source at a facility.

#### 5.2. NEW SOURCE PERFORMANCE STANDARDS

The following NSPS subparts in 40 CFR Part 60 are potentially applicable for the proposed temporary generator engines and associated tanks at the Aladdin Booster Station.

Subpart	Description	Applicability	Affected Sources
Subpart A	General Provisions	No	N/A
Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A
Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modifications commenced after July 23,1984	No	N/A

Table 5-1. Potentially Applicable NSPS Subparts

Each potentially applicable NSPS subpart of 40 CFR Part 60 is discussed in the subsections below.

#### 5.2.1. Subpart A - General Provisions

Any source subject to a source-specific NSPS is also subject to the general provisions of NSPS Subpart A. Unless specifically excluded by the source-specific NSPS, Subpart A generally requires initial construction notification, initial startup notification, performance tests, performance test date initial notification, general monitoring requirements, general recordkeeping requirements, and semiannual monitoring and/or excess emission

reports. As discussed below, the temporary generator engines are not subject to NSPS Subpart IIII and are therefore not subject to NSPS Subpart A.

#### 5.2.2. Subpart IIII Compression Ignition Internal Combustion Engines

NSPS Subpart IIII establishes requirements for owners/operators of stationary compression ignition internal combustion engines that commenced construction (ordered an engine) after July 11, 2005 and manufactured after April 1, 2006.

NSPS IIII defines stationary internal combustion engines as follows (40 CFR 60.4219):

Stationary internal combustion engine means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a non-road engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle, aircraft, or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

40 CFR Part 1068 is the General Compliance Provisions for Nonroad Programs. 40 CFR 1068.30 provides the following definitions for a non-road engine:

A non-road engine is any internal combustion engine:

- i. In or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers);or
- ii. In or on a piece of equipment that is intended to be propelled while performing its function(such as lawnmowers and string trimmers); or
- iii. That, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

40 CFR 1068.30 also states that an internal combustion portable engine is not a non-road engine, if it will remain for more than 12 consecutive months at a location and a location is defined as any single site at a building, structure, facility, or installation. These definitions establish that non-road engines are not subject to the NSPS and that portable engines that are at a location will be considered as non-road engines if they remain at the same location for less than 12 consecutive months. The EPA also stated in the response to comments Subpart IIII document that "Portable electric generating engines that remain in one location for less than 12 consecutive months are considered nonroad engines and are subject to requirements for nonroad engines".

The Diesel Engines (Gen 1 to Gen 11) will be at the site for a period of less than 12 consecutive months and can be considered to be non-road engines and hence, are not subject to the requirements of NSPS IIII.

#### 5.2.3. Subpart Kb - Volatile Organic Liquid Storage Vessels

NSPS Subpart Kb applies to volatile organic liquid storage vessels constructed, reconstructed, or modified after July 23, 1984 with a capacity of 19,813 gallons (gal) or more. ONEOK proposes to install four (4) 2,500 gallon diesel fuel oil tanks; therefore, since all storage tanks will be smaller than 19,813 gal, this subpart does not apply to this facility.

## 5.3. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

The facility will continue to remain an area source of HAPs. The following subparts in 40 CFR Part 63 are potentially applicable for the proposed temporary generator engines and associated tanks at the Aladdin Booster Station.

Table 5-2 Potentially Applicable NESHAP Subparts

Subpart	Description	Applicability	Affected Sources
Subpart A	General Provisions	No	No
Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants: Reciprocating Internal Combustion Engines	No	No

Each potentially applicable Subpart of 40 CFR Part 63 is discussed in the subsections below.

#### 5.3.1. Subpart A - General Provisions

Any source subject to a source-specific NESHAP is also subject to the general provisions of NESHAP Subpart A. Unless specifically excluded by the source-specific NESHAP, Subpart A generally requires initial construction notification, initial startup notification, performance tests, performance test date initial notification, general monitoring requirements, general recordkeeping requirements, and semiannual monitoring and/or excess emission reports. As discussed below, there are no NESHAP regulations that applies to the proposed temporary generator engines operation. Therefore, NESHAP Subpart A will not apply.

# 5.3.2. Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants: Reciprocating Internal Combustion Engines

The NESHAP found in 40 CFR 63, Subpart ZZZZ was designed to regulate emissions from stationary reciprocating internal combustion engines (RICE) at both major and area sources of hazardous air pollutants.

The NESHAP contains the same definition of stationary RICE as defined in the above NSPS Section. Non-road engines are exempt from the requirements of NESHAP ZZZZ. Portable RICE engines will be considered non-road engines if they do not remain in a location for more than 12 consecutive months.

The Diesel Engines (Gen 1 to Gen 11) will be at the site for a period of less than 12 consecutive months and can be considered to be non-road engines and hence, are not subject to the requirements of NESHAP ZZZZ.

#### 6. AMBIENT AIR QUALITY ANALYSIS

ONEOK requests that an ambient impact modeling analysis for this permit application be waived, considering the usage, location (generators operational at a designated attainment area in Wyoming for criteria pollutants.<sup>3</sup>) and the temporary nature of operations for these generator engines and tanks<sup>4</sup>.

<sup>&</sup>lt;sup>3</sup> The United States Protection Agency (U.S. EPA) Green Book. Source: <a href="http://www.epa.gov/oar/oaqps/greenbook/ancl.html#WYOMING">http://www.epa.gov/oar/oaqps/greenbook/ancl.html#WYOMING</a>, accessed July 2015.

<sup>&</sup>lt;sup>4</sup> Per communication between Mr. Cole Anderson (WDEQ) and Ms. Kim Ayotte (Trinity) on June 15, 2015 – Modeling will be required only when the sources operate for a period of more than 180 days.

ONEOK Bakken Pipeline, L.L.C | Aladdin Booster Station - Temporary Power Generators Permit Application

This section includes all of the applicable construction permit application forms, as listed below:

- > Permit Application Form
- Specific Emission Unit Attributes Forms
- > Emissions Information Forms
- > Release Point Information Forms

# WYOMING

## Department of Environmental Quality Air Quality Division

## Permit Application Form

		Is this a revision	to an existing a	application?			
WYO	MING	Yes	_	Nox		Date of Application:	7/16/2015
		Previous Applica	tion#:	N/A		_	
COMPA	NY INFO	RMATION:		,	_		
Company I				ONEOK Bakken	Dinalina I.I.C		
Address:	varie.		P O Box 29	9, 2001 South High			
City:	Med	ford	State:	Oklahoma	T T	7in Coder 7	22750 2700
Country:		USA	1	Phone Number		Zip Code: <u>7</u> (580) 395-6322	3/39-3/00
	INFORN		1	THORE NUMBER	·	(380) 333-0322	
Facility Na		MATION.		Al-44:- D			
	ty or Existin	g Eacility:	New	Aladdin Boos	ster Station		
Facility Des		•		ore for providing a		III D I CI II	
Facility Cla		Minor	T General			at the Booster Station	
Facility Typ			or, Stationary	Operating Status	Operating		
racinty ryp	Je.	Generati	or, stationary				
For Oil & G	as Product	ion Sites ONLY:					
		on (FDOP)/Date o	of Modification				
		is facility contain		'.	T		
	ntact the Di		1125.		_		
API Numbe		V131011.					
	(5).						
NAICS Code	e:						
	LOCATION	ON.					
			ida/langituda sa	ea or section/townsh		TF 000 - 2 - 4 - F	
Physical Ac		in in either the lautt	ide/iongitude ar	ea or section/townsn	ip/range area. Bo	th are not required.	
City:	, ai C55.		7in	Code:			
State:			County:	code.	T		
			country.		_		
OR			2 2			-	
Latitude:	44.70	015 L	ongitude:	-104.20328	_	County: C	Crook
Quarter Qu			-	uarter:			
Section:	5		Township:	54N		Range: _	61W
			NAD 83/WGS8	34 datum and 5 dig	its after the dec	cimal (i.e. 41.12345, -10	7.56789)
		MATION:					
*Note that an	Environmental	AND NSR Permitting Co	ntact is required for	r your application to be de	eemed complete by ti	ne agency.	
Title:	Mr.	] Fi	rst Name:		Patrick		
Last Name			Illison				
Company N	Name:			ONEOK Bakken	Pipeline, L.L.C		
Job Title:				Environmental Eng			
Address:			P.O B	ox 29, 2001 South	Highway 81		
City:		Medford	Stat	e:	Oklaho	ma	
	73759-370		-				
	hone No.:	(580) 395-6	322	E-mail		Patrick.Allison@oneok.c	<u>om</u>
	Phone No.:			Fax No.	:		
Contact Ty	pe:	Environmental	contact	Start Date	:		

Additional Contact Time (if and all			
Additional Contact Type (if needed): Title: First Na		N/A	
Last Name:	ne.		
Company Name:		_	
Job Title:			
Address:			-
City:	State:	T	
Zip Code:	State.		
Primary Phone No.:		E-mail:	
Mobile Phone No.:	· · · · · · · · · · · · · · · · · · ·	Fax No.:	
Contact Type:		Start Date:	
FACILITY APPLICATION INFORM	IATION:		
General Info:			
Has the facility changed location or is it a	new/greenfield fa	icility?	No
Has a Land Use Planning document been			No
Is the facility located in a sage grouse co		Sheatlon:	No
If the facility is in a sage grouse core area		number?	140
* For questions about sage grouse core of			
Federal Rules Applicability - Fac		and a rish bepartment.	
Prevention of Significant Deterioration (I			No
Non-Attainment New Source Review:			No
Modeling Section:			140
Has the Air Quality Division been contact	ted to determine if	modeling is required?	[v
Is a modeling analysis part of this applica		modeling is required?	Yes
is a moderning analysis part of this applica	ition:		No
Is the proposed project subject to Prever	ntion of Significant I	Deterioration (PSD) requirements?	No
Has the Air Quality Division been notified	to schedule a pre-	application meeting?	No
Has a modeling protocol been submitted	to and approved b	v the Air Quality Division?	No
Has the Air Quality Division received a Q	/D analysis to subm	it to the respective FI Ms to determi	
the need for an AQRV analysis?	,	is the respective remarks to determine	No
Required Attachments:			
Facility Map	~		
Process Flow Diagram	<b>7</b>		
Modeling Analysis (if applicable)			
Land Use Planning Document			
Detailed Project Description	4		
Emissions Calculations	✓		
4-man de la companya	er Allen	VP NGL P	pelines and Terminals
Responsible Off	icial (Printed Name	)	Title
an Official Representative of the Compar	ny, state that I have	knowledge of the facts herein set for	orth and that the same
are true and correct to the best of my kn	owledge and belief	. I further certify that the operation	al information provided
and emission rates listed on this applicat	ion reflect the antic	cipated emissions due to the operati	on of this facility. The
facility will operate in compliance with a	ll applicable Wyomi	ing Air Quality Standards and Regula	tions.

Signature: Waw and (ink)

Date: 7/16/15

Company Equipment		Gen 1				
			Temporary Diesel Gen	nerator Eng	gine to power b	uildings and
other areas of the bo	oster statio	n				
Operating Status:	Operating	_				
Initial Construction Co	ommencem	ent Date:	5/2	9/2015		
Initial Operation Com	Initial Operation Commencement Date:			9/2015		-
Most Recent Construction/ Modification					-	
Commencement Date	e:			N/A		
						-
Most Recent Operation	on Commer	cement Date:		N/A		
Select reason(s) for the	his emissio	ns unit being in	cluded in this applicati	on (must l	pe completed re	egardless of date of
installation or modifi				•	•	-8
Reason	Construct	ion (Greenfield	/New Facility)	7		
				_		
If reason is Reconstru	ction or Te	mporarv Permi	it or Other, please exp	lain helow		
			i o. omer, piedse exp	iaiii below	•	
Name Plate Rating:	173			Units:	hn	1
Site Rating:	173				hp	-
Primary Fuel Type:	Diesel			Units:	hp	]
Secondary Fuel Type:		T		7		
Model Name and Nur		Cummins Of	Dr. CO	_		
		Cummins, QS	I			
Engine Type:		ssion Ignition	]			
Serial Number Trackir						
Serial Number:	TBD		-	Order Da	te:	TBD
Manufacturer Name:		Cummins				
Construction/Installat				5/29/20		_
Operation Commence		t-up Date:		5/29/20	)15	_
Manufacture Date:	Aug-12					
Btu Content:	137,000			Units:	BTU/gallon	
Fuel Sulfur Content:	Neg			Units:		
Type of Service:	Other					-
SCC Codes: List all Sou (e.g., 1-02-002-04).	urce Classifi	cation Code(s)	(SCC) that describe the	process(e	s) performed by	the emission source
			20100102			
	ž.					
Potential Operating S	Schedule:	Provide the o	perating schedule for t	his emissi	on unit.	
Hours/day	<i>'</i> :	24				
Hours/yea	ır:	4,320		-		
				<del>-</del> 3.5		

Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?  Yes No  Pollutant: NO <sub>X</sub> , CO, PM and SO <sub>2</sub> Proposed BACT: Emission Standards of EPA Tier 4 and NSPS IIII sulfur content in fuel limit  *If yes, attach BACT Analysis with this application.  Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?  Yes No  Pollutant:  Proposed LAER:  *If yes, attach LAER Analysis with this application.  Federal and State Rule Applicability:  New Source Performance Standards (NSPS): Not Affected  New Source Performance Standard are listed under 40 CFR 60-  Standards of Performance for New Stationary Sources.  NSPS Subpart:
Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?  Yes
Yes No  Pollutant: NO <sub>X</sub> , CO, PM and SO <sub>2</sub> Proposed BACT: Emission Standards of EPA Tier 4 and NSPS IIII sulfur content in fuel limit  *If yes, attach BACT Analysis with this application.  Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?  Yes No  Pollutant:  Proposed LAER:  *If yes, attach LAER Analysis with this application.  Federal and State Rule Applicability:  New Source Performance Standards (NSPS): Not Affected  New Source Performance Standard are listed under 40 CFR 60-  Standards of Performance for New Stationary Sources.
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Yes No  Pollutant:  Proposed LAER: *If yes, attach LAER Analysis with this application.  Federal and State Rule Applicability:  New Source Performance Standards (NSPS):  New Source Performance Standard are listed under 40 CFR 60-  Standards of Performance for New Stationary Sources.
Pollutant:  Proposed LAER:  *If yes, attach LAER Analysis with this application.  Federal and State Rule Applicability:  New Source Performance Standards (NSPS):  New Source Performance Standard are listed under 40 CFR 60-  Standards of Performance for New Stationary Sources.
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Proposed LAER:  *If yes, attach LAER Analysis with this application.  Federal and State Rule Applicability:  New Source Performance Standards (NSPS):  New Source Performance Standard are listed under 40 CFR 60-  Standards of Performance for New Stationary Sources.
*If yes, attach LAER Analysis with this application.  Federal and State Rule Applicability:  New Source Performance Standards (NSPS):  New Source Performance Standard are listed under 40 CFR 60-  Standards of Performance for New Stationary Sources.
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New Source Performance Standard are listed under 40 CFR 60- Standards of Performance for New Stationary Sources.
Standards of Performance for New Stationary Sources.
NSDS Subpart:
N3F3 Subpart.
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):  Not Affected
National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).
Part 61 NESHAP Subpart:
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):  Not Affected
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)
standards are listed under 40 CFR 63
Part 63 NESHAP Subpart:
Prevention of Significant Deterioration (PSD):  Not Affected  These rules are found and MACOR Of set at 200 and 100 an
Prevention of Significant Deterioration (PSD):  Not Affected  These rules are found under WAQSR Chapter 6, Section 4.

Company Equipment ID: Ger	1 2		
Company Equipment Description:	Temporary Diesel Ger	nerator Engine to power p	umps
Operating Status: Operating			
Initial Construction Commencement D	5/5	20/2015	-
Initial Operation Commencement Date		29/2015	-
Most Recent Construction/ Modification		29/2015	_
Commencement Date:	on .		
Commencement Date.		N/A	_
Most Recent Operation Commenceme	nt Date:	N/A	
Select reason(s) for this emissions unit			egardless of date of
installation or modification):			-garares er date of
Reason: Construction (G	Greenfield/New Facility)	7	
		_	
If reason is <b>Reconstruction</b> or <b>Tempore</b>	ary Permit or Other please evo	lain helow:	
The state of the s	ary remine of other, picase exp	nam below.	
Name Plate Rating: 314		Units: hp	7
Site Rating: 314	•	Units: hp	-
Primary Fuel Type: Diesel		тр	_
Secondary Fuel Type:		7	
	nmins, QSB7-G6	_	
Engine Type: Compression			
Serial Number Tracking Table:	igilition		
Serial Number: TBD		Order Date:	TDD
	nmins	Order Date:	TBD
Construction/Installation Commencem		E/20/201E	_
Operation Commencement/ Start-up D	version and contract the second contract to t	5/29/2015 5/29/2015	-
Manufacture Date: Feb-11		3/29/2013	-
Btu Content: 137,000		Units: BTU/gallon	
Fuel Sulfur Content: Neg		-10/8411011	
Type of Service: Other		Units:	
Type of service.			
SCC Codos: List all Source Classification	Codo(s) (SCC) that dans it a life	( ) (	TV
SCC Codes: List all Source Classification	(SCC) that describe the	process(es) performed b	y the emission source
(e.g., 1-02-002-04).			
	20100102		
Potential Operation Calculate	21. 0 0 1 7 1 S	v .	
1000	vide the operating schedule for t	this emission unit.	
Hours/day: 24		_	
Hours/year: 4320	0	_	

Control Equipment: No  If yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.
Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?  Yes No
Pollutant: NO <sub>X</sub> , CO, PM and SO <sub>2</sub>
Proposed BACT: Emission Standards of EPA Tier 4 and NSPS IIII sulfur content in fuel limit
*If yes, attach BACT Analysis with this application.
Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?  Yes  No  Pollutant:
Proposed LAER:
*If yes, attach LAER Analysis with this application.
Federal and State Rule Applicability:  New Source Performance Standards (NSPS):  New Source Performance Standard are listed under 40 CFR 60-  Standards of Performance for New Stationary Sources.  NSPS Subpart:
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):  Not Affected
National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).  Part 61 NESHAP Subpart:
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):  Not Affected
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63 Part 63 NESHAP Subpart:
Prevention of Significant Deterioration (PSD):  Not Affected  These rules are found under WAQSR Chapter 6, Section 4.
Non-Attainment New Source Review: Not Affected  These rules are found under WAQSR Chapter 6, Section 13.

Company Equipment	ID:	Gen 3				
Company Equipment	Description	:	Temporary Diesel Ger	nerator En	gine to power p	umps
					8e to poster p	umps .
Operating Status:	Operating					
Initial Construction Co	ommencem	ent Date:	5/2	29/2015		_
Initial Operation Com	mencemen	t Date:		29/2015		-
Most Recent Constru	ction/ Modi	fication				<del>-</del>
Commencement Date	2:			N/A		_
Most Recent Operation	on Commen	cement Date:		N/A		
Select reason(s) for this emissions unit being in			cluded in this applicat		ho completed r	-
installation or modifi		is diffe being in	ciadea iii ciiis applicat	ion (must	be completed i	egardless of date of
		ion (Greenfield	/Now Encility)	٦		
Neuson	. Construct	ion (Greenneid	/ New Facility)			
If reason is Paganetru	ction or To		4 01			
ii reason is <b>keconstru</b>	ction or lei	mporary Permi	t or <i>Other,</i> please exp	lain below	<b>/</b> :	
Name Plate Rating:	314			11. 1		٦
Site Rating:	314			Units:	hp	-
				Units:	hp	
Primary Fuel Type:	Diesel	T		7		
Secondary Fuel Type:				_		
Model Name and Nur		Cummins, QS	B7-G6			
Engine Type:		ssion Ignition				
Serial Number Trackir	A CONTRACTOR					
Serial Number:	TBD			Order Da	ate:	TBD
Manufacturer Name:		Cummins				-
Construction/Installat				5/29/2	015	_
Operation Commence	ement/ Start	t-up Date:		5/29/2	015	
Manufacture Date:	Feb-11					_
Btu Content:	137,000			Units:	BTU/gallon	
Fuel Sulfur Content:	Neg			Units:		
Type of Service:	Other					
SCC Codes: List all Sou	irca Classifi	cation Cadala	(SCC) that describe the		\	
	arce Classille	cation code(s) (	(SCC) that describe the	: process(e	es) performed b	y the emission source
(e.g., 1-02-002-04).						
			20100102			
Potential Operation	Schodular	Dravida the	novotina sale da la C		Course Marrier	
Potential Operating S			perating schedule for	tnis emissi	on unit.	
Hours/day		24		_		
Hours/yea	r:	4320		_		

Control Equipment: No  If yes, please fill out and attach the appropriate Control Device and Release Point Information	worksheets.
Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission u	nit?
✓ Yes No	
Pollutant: NO <sub>X</sub> , CO, PM and SO <sub>2</sub>	
Proposed BACT: Emission Standards of EPA Tier 4 and NSPS IIII sulfur content in fuel limit	t
*If yes, attach BACT Analysis with this application.	
Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission uni	t?
☐ Yes ✓ No	
Pollutant:	
Proposed LAER:	
*If yes, attach LAER Analysis with this application.	
Federal and State Rule Applicability:	
New Source Performance Standards (NSPS):  Not Affected	
New Source Performance Standard are listed under 40 CFR 60-	
Standards of Performance for New Stationary Sources.  NSPS Subpart:	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):	Not Affected
National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are lis	sted under 40 CFR 61.
(These include asbestos, benzene, beryllium, mercury, and vinyl chloride).	
Part 61 NESHAP Subpart:	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):	NI - + Aff I
	Not Affected
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63	
Part 63 NESHAP Subpart:	
Prevention of Significant Deterioration (PSD):  Not Affected	
These rules are found under WAQSR Chapter 6, Section 4.	
Non-Attainment New Source Review: Not Affected	
These rules are found under WAQSR Chapter 6, Section 13.	

Company Equipment	ID:	Gen 4				
Company Equipment	Description	:	Temporary Diesel Ger	nerator En	gine to power p	umps
					<u> </u>	
Operating Status:	Operating	5				
Initial Construction C	ommencem	ent Date:	5/2	29/2015		-
Initial Operation Com	mencemen	t Date:		29/2015		_
Most Recent Constru	ction/ Modi	fication				_
Commencement Date	e:			N/A		<u></u>
Most Recent Operation	on Commen	cement Date:		N/A		
Select reason(s) for this emissions unit being inc			cluded in this applicat		be completed r	egardless of date of
installation or modifi		· ·		(		egaratess of date of
		ion (Greenfield	/New Facility)			
	L		,	_		
If reason is Reconstru	ction or Te	mnoranı Permi	it or Other, please exp	lain holov		
ii reason is neconstra	ction of rea	inporary Fermi	t of Other, please exp	nam belov	v.	
Name Plate Rating:	314			11.2		٦
Site Rating:	314			Units:	hp	-
and the same				Units:	hp	_
Primary Fuel Type:	Diesel	T		7		
Secondary Fuel Type:						
Model Name and Nur		Cummins, QS	B7-G6			
Engine Type:		ssion Ignition	]			
Serial Number Tracking						
Serial Number:	TBD			Order Da	ate:	TBD
Manufacturer Name:		Cummins				
Construction/Installat				5/29/2	015	
Operation Commence	ement/ Star	t-up Date:		5/29/2	015	_
Manufacture Date:	Feb-11					_
Btu Content:	137,000			Units:	BTU/gallon	
Fuel Sulfur Content:	Neg			Units:	, 5	
Type of Service:	Other					_
			1			
SCC Codes: List all Sou	urce Classific	cation Code(s)	(SCC) that describe the	nrocessle	es) nerformed h	v the emission source
(e.g., 1-02-002-04).			(1 1 0) that accombc the	. process(c	es, periornica b	y the emission source
( 0,						
			20100102			
N			20100102			
Dotontial Organia	ا - ا - ا - مام	Describe 1				
Potential Operating S			perating schedule for t	this emiss	ion unit.	
Hours/day		24		_		
Hours/yea	ir:	4320				

Control Equipment: No
If yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.
Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?
Yes No
Pollutant: NO <sub>x.</sub> CO, PM and SO <sub>2</sub>
Proposed BACT: Emission Standards of EPA Tier 4 and NSPS IIII sulfur content in fuel limit
*If yes, attach BACT Analysis with this application.
Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?  Yes  No
☐ Yes ☑ No Pollutant:
Proposed LAER:
*If yes, attach LAER Analysis with this application.
Federal and State Rule Applicability:
New Source Performance Standards (NSPS): Not Affected
New Source Performance Standard are listed under 40 CFR 60-
Standards of Performance for New Stationary Sources.
NSPS Subpart:
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):  Not Affected
National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61.
(These include asbestos, benzene, beryllium, mercury, and vinyl chloride).
Part 61 NESHAP Subpart:
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):  Not Affected
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)
standards are listed under 40 CFR 63
Part 63 NESHAP Subpart:
Prevention of Significant Deterioration (PSD): Not Affected
These rules are found under WAQSR Chapter 6, Section 4.
Non-Attainment New Source Review: Not Affected
These rules are found under WAQSR Chapter 6, Section 13.

Company Equipment	ID:	Gen 5					
Company Equipment	Description	1:	Temporary Diesel Ger	nerator Eng	gine to power p	umps	
4							
Operating Status:	Operating	3					
Initial Construction Co	ommencem	ent Date:	5/2	29/2015		-	
Initial Operation Com	mencemen	t Date:		29/2015		_	
Most Recent Constru	ction/ Modi	ification				_	
Commencement Date	2:			N/A			
						_	
Most Recent Operation	on Commer	cement Date:		N/A			
			cluded in this applicat		ne completed re	egardless of date of	
installation or modifi		3		(	o completed i	egaratess of date of	
Reason	: Construct	ion (Greenfield	/New Facility)	7			
		(	,	_			
If reason is Reconstru	ction or Te	mporary Permi	it or Other, please exp	lain helow			
		porary remin	e of other, piease exp	nam below	•		
Name Plate Rating:	314			Units:	hn	٦	
Site Rating:	314				hp	-	
Primary Fuel Type:	Diesel			Units:	hp		
Secondary Fuel Type:				٦			
Model Name and Nur		Cummins, QS	P7 CC				
			1 T				
Engine Type: Serial Number Trackir	-	ssion Ignition	]				
Serial Number:							
	TBD	- ·		Order Da	te:	TBD	
Manufacturer Name:		Cummins				_	
Construction/Installat				5/29/20		<del>-</del>	
Operation Commence		t-up Date:		5/29/20	)15	_	
Manufacture Date:	Feb-11						
Btu Content:	137,000			Units:	BTU/gallon		
Fuel Sulfur Content:	Neg			Units:			
Type of Service:	Other						
SCC Codes: List all Sou	ırce Classifi	cation Code(s)	(SCC) that describe the	process(e	s) performed by	y the emission source	5
(e.g., 1-02-002-04).							
			20100102				
Potential Operating S	Schedule:	Provide the o	perating schedule for t	this emission	on unit.		
Hours/day	<b>'</b> :	24					
Hours/yea	r:	4320		-			
50.50				_			

Control Equipment: No
If yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.
Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?
✓ Yes No
Pollutant: NO <sub>X,</sub> CO, PM and SO <sub>2</sub>
Proposed BACT: Emission Standards of EPA Tier 4 and NSPS IIII sulfur content in fuel limit
*If yes, attach BACT Analysis with this application.
Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?
☐ Yes ✓ No
Pollutant:
Proposed LAER:
*If yes, attach LAER Analysis with this application.
Federal and State Rule Applicability:
New Source Performance Standards (NSPS): Not Affected
New Source Performance Standard are listed under 40 CFR 60-
Standards of Performance for New Stationary Sources.
NSPS Subpart:
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):  Not Affected
National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61.
(These include asbestos, benzene, beryllium, mercury, and vinyl chloride).
Part 61 NESHAP Subpart:
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):  Not Affected
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)
standards are listed under 40 CFR 63
Part 63 NESHAP Subpart:
Prevention of Significant Deterioration (PSD):  Not Affected
These rules are found under WAQSR Chapter 6, Section 4.
Non-Attainment New Source Review: Not Affected
These rules are found under WAQSR Chapter 6, Section 13.

Company Equipment	ID:	Gen 6				
Company Equipment	Description		Temporary Di	esel Generator Eng	gine to power p	umps
					'	
Operating Status:	Operating					
Initial Construction Co	ommencem	ent Date:		5/29/2015		-
Initial Operation Com	mencement	Date:		5/29/2015		-
Most Recent Constru	ction/ Modi	fication				_
Commencement Date	2:			N/A		_
Most Recent Operation	on Commen	cement Date:		N/A		
Select reason(s) for t	nis emission	s unit being in	cluded in this		be completed r	egardless of date of
installation or modifi				, ,		-garanes et aute et
		ion (Greenfield	/New Facility)			
			, , ,			
If reason is <i>Reconstru</i>	ction or Tei	mporary Permi	it or Other, pl	ease explain below	r:	
Name Plate Rating:	314			Units:	hp	7
Site Rating:	314			Units:	hp	-
Primary Fuel Type:	Diesel				[p	_
Secondary Fuel Type:		1				
Model Name and Nur	nher	Cummins, QS	SB7-G6			
Engine Type:		ssion Ignition	T			
Serial Number Tracking		331011 Igilition	_			
Serial Number:	TBD			Order Da	140.	TDD
Manufacturer Name:		Cummins		Order Da	ite.	TBD
Construction/Installat	ion Commo			F /20 /2/	24.5	_
			·	5/29/20		
Operation Commence		t-up Date:	-	5/29/20	)15	_
Manufacture Date:	Feb-11					1
Btu Content:	137,000			Units:	BTU/gallon	
Fuel Sulfur Content:	Neg		T	Units:		
Type of Service:	Other					
SCC Codes: List all Sou	irce Classifi	ration Code(s)	(SCC) that dose	criba tha process/s	us) parformed b	y the emission source
(e.g., 1-02-002-04).	aree classiii	cation code(s)	(See) that desi	rine tile hioress(e	s) benonied p	y the emission source
(e.g., 1-02-002-04).						
			201001	0.3		
			201001	.UZ		
Potential Operating	Schedule:	Provide the o	operating sched	dule for this emissi	on unit	
Hours/day		24	1-2.2	101 1113 1111331	o willer	
Hours/yea		4320				
110413/ 900	41.	1320				

If yes, please fill out and attach the appropriate Control Device and Release Point Information	vorksheets.
Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission un	it?
✓ Yes □ No	
Pollutant: NO <sub>X</sub> , CO, PM and SO <sub>2</sub>	
Proposed BACT: Emission Standards of EPA Tier 4 and NSPS IIII sulfur content in fuel limit	
*If yes, attach BACT Analysis with this application.	
Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit	?
☐ Yes ☑ No	
Pollutant:	
Proposed LAER:	
*If yes, attach LAER Analysis with this application.	
Federal and State Rule Applicability:	
New Source Performance Standards (NSPS): Not Affected	
New Source Performance Standard are listed under 40 CFR 60-	
Standards of Performance for New Stationary Sources.	
NSPS Subpart:	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):	Not Affected
National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are liste	ed under 40 CFR 61
(These include asbestos, benzene, beryllium, mercury, and vinyl chloride).	
Part 61 NESHAP Subpart:	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):	Not Affected
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)	
standards are listed under 40 CFR 63	
Part 63 NESHAP Subpart:	
Prevention of Significant Deterioration (PSD):  Not Affected	7
These rules are found under WAQSR Chapter 6, Section 4.	,
Non-Attainment New Source Review: Not Affected	
These rules are found under WAQSR Chapter 6, Section 13.	

Company Equipment	ID:	Gen 7				
Company Equipment	Description	:	Temporary Diesel Ger	nerator En	gine to power p	umps
					Birro to be ire. b	amps
Operating Status:	Operating		I			
Initial Construction Co	mmencem	ent Date:	5/2	29/2015		-
Initial Operation Com	mencement	t Date:		29/2015		-
Most Recent Construc	ction/ Modi	fication				-
Commencement Date	2:		V	N/A		_
Most Recent Operation	on Commen	cement Date		N/A		
-			cluded in this applicat		ho completed r	-
installation or modifie		o anne semig in	ciadea iii tiiis applicat	ion (mast	be completed it	egardless of date of
		ion (Greenfield	/New Facility)	1		
Reason	. Constructi	ion (dicennela	/ IVEW Facility)			
If reason is Pacanstru	ction or To	mnorani Bormi	t or <i>Other,</i> please exp	الماما الماما		
ii reason is <b>neconstru</b>	ction of rei	nporary Permi	t or <i>Other</i> , please exp	ilain below	/:	
Name Plate Rating:	314			Units:	la o	٦
Site Rating:	314				hp	-
Primary Fuel Type:	Diesel			Units:	hp	_
Secondary Fuel Type:	Diesei	T		٦		
Model Name and Nun	ahar:	Cumming OS	D7 CC			
		Cummins, QS	B/-Gb			
Engine Type:		ssion Ignition				
Serial Number Trackin Serial Number:	_					
	TBD	<u> </u>		Order Da	ate:	TBD
Manufacturer Name:		Cummins				_
Construction/Installat				5/29/20		_
Operation Commence		t-up Date:		5/29/20	015	_
Manufacture Date:	Feb-11		-			
Btu Content:	137,000			Units:	BTU/gallon	
Fuel Sulfur Content:	Neg			Units:		
Type of Service:	Other					
SCC Codes: List all Say	irco Classifi	cation Cada(a)	(CCC) that describes 1	,		71
	ii ce Ciassiii	Lation Code(s)	(SCC) that describe the	process(e	es) performed by	y the emission source
(e.g., 1-02-002-04).						
			20100102			
Detential Occurs	Sala a de L	D				
Potential Operating S			perating schedule for	this emissi	on unit.	
Hours/day		24		_		
Hours/yea	r:	4320		_		

Control Equipment: No	
f yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.	
Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?	
✓ Yes No	
Pollutant: NO <sub>X</sub> , CO, PM and SO <sub>2</sub>	
Proposed BACT: Emission Standards of EPA Tier 4 and NSPS IIII sulfur content in fuel limit	
If yes, attach BACT Analysis with this application.	
owest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?	
☐ Yes ✓ No	
Pollutant:	
Proposed LAER:	
If yes, attach LAER Analysis with this application.	
Federal and State Rule Applicability:	
New Source Performance Standards (NSPS): Not Affected	
New Source Performance Standard are listed under 40 CFR 60-	
Standards of Performance for New Stationary Sources.	
NSPS Subpart:	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):  Not Affected	$\neg$
National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61.	
(These include asbestos, benzene, beryllium, mercury, and vinyl chloride).	
Part 61 NESHAP Subpart:	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):  Not Affected	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)	
standards are listed under 40 CFR 63	
Part 63 NESHAP Subpart:	
Prevention of Significant Deterioration (PSD):	
These rules are found under WAQSR Chapter 6, Section 4.	
Non-Attainment New Source Review: Not Affected	
These rules are found under WAQSR Chapter 6, Section 13.	

Company Equipment I	ID:	Gen 8				
Company Equipment I	Description	1:	Temporary Diesel G	enerator En	gine to power p	umps
						'
Operating Status:	Operating	7				
Initial Construction Co	mmencem	ent Date:	5	/29/2015		-
Initial Operation Comr	mencemen	t Date:		/29/2015		-
Most Recent Construc	tion/ Mod	ification		· · · · · · · · · · · · · · · · · · ·		-
Commencement Date	:			N/A		_
Most Recent Operatio	n Commer	ncement Date:		N/A		
Select reason(s) for th	is emissio	ns unit being in	cluded in this applica	tion (must	be completed r	egardless of date of
installation or modific					•	
Reason:	Construct	ion (Greenfield	/New Facility)			
If reason is Reconstruc	ction or Te	mporary Perm	it or Other, please ex	plain below	<i>/</i> :	
	2200					
Name Plate Rating:	314			Units:	hp	
Site Rating:	314			Units:	hp	
Primary Fuel Type:	Diesel					
Secondary Fuel Type:						
Model Name and Num	ber:	Cummins, QS	SB7-G6			
Engine Type:	Compre	ssion Ignition				
Serial Number Tracking	g Table:					
Serial Number:	TBD			Order Da	ite:	TBD
Manufacturer Name:		Cummins				
Construction/Installati	on Comme	encement Date	:	5/29/20	015	_
Operation Commencer	ment/ Star	t-up Date:		5/29/20	015	_
Manufacture Date:	Feb-11					_
Btu Content:	137,000			Units:	BTU/gallon	
Fuel Sulfur Content:	Neg			Units:		
Type of Service:	Other					_
			-			
SCC Codes: List all Sou	rce Classifi	cation Code(s)	(SCC) that describe th	e process(e	s) performed b	v the emission source
(e.g., 1-02-002-04).						,
			20100102			
Potential Operating S	chedule:	Provide the o	perating schedule for	this emissi	on unit.	
Hours/day:		24	925.		and 1000000000000000000000000000000000000	
Hours/year		4320				
. 1						

Control Equip	ment: No					
If yes, please j	fill out and attach the	appropriat	e Control De	evice and Release	e Point Information (	worksheets.
Best Available	e Control Technology (	BACT): Wa	as a BACT Ar	nalysis completed	l for this emission un	it?
✓ Ye			No	4*0		
Pollutant: NO	O <sub>x,</sub> CO, PM and SO <sub>2</sub>					
Proposed BAC	CT: Emission Sta	ndards of E	PA Tier 4 an	d NSPS IIII sulfur	content in fuel limit	
*If yes, attach	BACT Analysis with th					
Lowest Achiev	vable Emission Rate (L	AER): Was	a LAER Ana	lysis completed f	or this emission unit	?
☐ Ye		V	No	.,	or and annosion and	
Pollutant:						
Proposed LAEI	R:					
	LAER Analysis with the	s applicatio	on.			
Fodous Loud C						
	tate Rule Applicability					
	erformance Standards	23		Not Affected		
	ew Source Performance					
	andards of Performanc	e for New S	tationary So	ources.		
1/1/2	SPS Subpart:					
National Emiss	sion Standards for Haz	ardous Air I	Pollutants (1	NESHAP Part 61):		Not Affected
	ational Emissions Stand					
(Th	hese include asbestos,	benzene, b	peryllium, me	ercury, and vinyl	chloride).	ed under 40 OF N OT.
	rt 61 NESHAP Subpart					
National Emiss	sion Standards for Haz	ardous Air I	Pollutants (N	JESHAP Part 631.		Not Affected
	ational Emission Standa					Not Affected
sta	andards are listed unde	r 40 CFR 6	aruous Air i 3	Poliutants (NESH	IAP Part 63)	
	rt 63 NESHAP Subpart:					
				***************************************		
Prevention of :	Significant Deterioration	on (PSD):		Not Affected		7
	ese rules are found un		R Chapter 6			_
Nam Attain	The Court of the C					
	ent New Source Review		Not Affect			
In	ese rules are found un	aer WAQSI	≺ Chapter 6	Section 13.		

Company Equipment	ID:	Gen 9				
Company Equipment	Description	:	Temporary Diesel Ger	nerator En	gine to power p	umps
					<u> </u>	
Operating Status:	Operating					
Initial Construction Co			5/2	29/2015		-
Initial Operation Com				29/2015		-
Most Recent Construc						-
Commencement Date	2:			N/A		
	21			_ 8		-
Most Recent Operation				N/A		
		is unit being in	ncluded in this applicati	ion (must	be completed re	egardless of date of
installation or modifi	_		1/51 = 111. )	٦		
Reason	Construct	ion (Greenfield	d/New Facility)			
If was a same in Danier :	-41 T		't O.I '			
If reason is <i>Reconstru</i>	ction or Tel	mporary Perm	it or Other, please exp	lain below	/:	
						7
Name Plate Rating:	433			Units:	hp	
Site Rating:	433			Units:	hp	
Primary Fuel Type:	Diesel			_		
Secondary Fuel Type:						
Model Name and Nur	nber:	Cummins, Q	SL9-G8			
Engine Type:	Compre	ssion Ignition				
Serial Number Trackir	ng Table:					
Serial Number:	TBD			Order Da	ate:	TBD
Manufacturer Name:		Cummins				
Construction/Installat	ion Comme	ncement Date	:	5/29/20	015	-
Operation Commence	ement/ Star	t-up Date:	***************************************	5/29/20		-
Manufacture Date:	Feb-11		**************************************			-
Btu Content:	137,000			Units:	BTU/gallon	
Fuel Sulfur Content:	Neg			Units:	5.0784.1011	
Type of Service:	Other		1	Omes.		7
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	o tire!		_			
SCC Codes: List all Sou	irca Classifi	cation Code(s)	(SCC) that describe the	procession	os) parformed by	utho ominaina anum
(e.g., 1-02-002-04).	arce Classiii	cation code(s)	(SCC) that describe the	: process(e	es) performed b	y the emission source
(e.g., 1-02-002-04).						
			20100102			
Potential Operating			operating schedule for	this emissi	ion unit.	
Hours/day		24		_		
Hours/yea	ar:	4320		_		

Control Equipment: No  If yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.
Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?  Yes No
Pollutant: NO <sub>X,</sub> CO, PM and SO <sub>2</sub>
Proposed BACT: Emission Standards of EPA Tier 4 and NSPS IIII sulfur content in fuel limit
*If yes, attach BACT Analysis with this application.
Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?  Yes  No  Pollutant:
Proposed LAER:
*If yes, attach LAER Analysis with this application.
in yes, action the Arialysis with this application.
Federal and State Rule Applicability:  New Source Performance Standards (NSPS):  New Source Performance Standard are listed under 40 CFR 60-  Standards of Performance for New Stationary Sources.
NSPS Subpart:
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):  Not Affected
National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).  Part 61 NESHAP Subpart:
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):  Not Affected
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63 Part 63 NESHAP Subpart:
Prevention of Significant Deterioration (PSD):  Not Affected  These rules are found under WAQSR Chapter 6, Section 4.
Non-Attainment New Source Review: Not Affected  These rules are found under WAQSR Chapter 6, Section 13.

Company Equipment	ID:	Gen 10				
Company Equipment			Temporary Diesel	Generator En	gine to power r	oumps
9 80 7 1					<u> </u>	
Operating Status:	Operating					
Initial Construction Co	ommencem	ent Date:		5/29/2015		_
Initial Operation Com	mencement	Date:		5/29/2015		_
Most Recent Constru	ction/ Modi	fication				
Commencement Date	<u>:</u>		4	N/A		
Most Recent Operation			-	N/A		
Select reason(s) for the		s unit being in	cluded in this appl	ication (must	be completed i	regardless of date of
installation or modifi						
Reason	: Construct	on (Greenfield	I/New Facility)			
If reason is <i>Reconstru</i>	ction or Tel	mporary Permi	it or Other, please	explain below	/:	
						_
Name Plate Rating:	433			Units:	hp	
Site Rating:	433			Units:	hp	
Primary Fuel Type:	Diesel					
Secondary Fuel Type:						
Model Name and Nur	nber:	Cummins, QS	SL9-G8			
Engine Type:	Compre	ssion Ignition				The state of the s
Serial Number Trackir	ng Table:		_			
Serial Number:	TBD			Order Da	ete:	TBD
Manufacturer Name:		Cummins				
Construction/Installat	ion Comme	ncement Date:	:	5/29/20	015	
Operation Commence	ement/ Start	-up Date:		5/29/20		
Manufacture Date:	Feb-11		***************************************			
Btu Content:	137,000			Units:	BTU/gallon	
Fuel Sulfur Content:	Neg			Units:	7,0	T
Type of Service:	Other				<u> </u>	
			1			
SCC Codes: List all Sou	urce Classific	cation Code(s)	(SCC) that describe	the processle	es) performed h	by the emission source
(e.g., 1-02-002-04).			(SOO) Ellat accertice	the process(c	.s, periornea c	by the emission source
(0.8.) = 0= 00= 0.7.						
			20100102			
			20100102			
Potential Operating	Schedule:	Provide the o	perating schedule	for this emissi	on unit	
Hours/day		24	Perating serieuale	101 (1113 (111133)	on unit.	
Hours/yea		4320				
110413/ 466		1320				

Control Equipment: No	
If yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.	
Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?	
✓ Yes	
Pollutant: NO <sub>x,</sub> CO, PM and SO <sub>2</sub>	
Proposed BACT: Emission Standards of EPA Tier 4 and NSPS IIII sulfur content in fuel limit	
*If yes, attach BACT Analysis with this application.	
Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?	
Yes Vo	
Pollutant:	
Proposed LAER:	
*If yes, attach LAER Analysis with this application.	
Federal and State Rule Applicability:	
New Source Performance Standards (NSPS):  Not Affected  Not Affected	
New Source Performance Standard are listed under 40 CFR 60- Standards of Performance for New Stationary Sources.	
NSPS Subpart:	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):	d
National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 (	FR 61.
(These include asbestos, benzene, beryllium, mercury, and vinyl chloride).	
Part 61 NESHAP Subpart:	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):  Not Affecte	4
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)	
standards are listed under 40 CFR 63	
Part 63 NESHAP Subpart:	
Drougation of Cignificant Datainalia (DCD)	
Prevention of Significant Deterioration (PSD):  Not Affected  These rules are found under WAQSR Chapter 6, Section 4.	
Those rules are lound under WAQSK Chapter 6, Section 4.	
Non-Attainment New Source Review: Not Affected	
These rules are found under WAQSR Chapter 6, Section 13.	

Company Equipment ID:	Gen 11				
Company Equipment Descript	on:	Temporary Diesel Go	enerator En	gine to power p	oumps
Operating Status: Operat	ing				
Initial Construction Commenc	ement Date:	5,	/29/2015		_
Initial Operation Commencem	ent Date:	5,	/29/2015		_
Most Recent Construction/ M	odification				-
Commencement Date:			N/A		
Most Recent Operation Comm			N/A		
Select reason(s) for this emiss	ions unit being in	cluded in this applica	tion (must	be completed r	egardless of date of
installation or modification):					
Reason: Constru	uction (Greenfield	I/New Facility)			
If reason is <i>Reconstruction</i> or	Temporary Permi	it or Other, please ex	plain below	<i>'</i> :	
Name Plate Rating: 433			Units:	hp	7
Site Rating: 433			Units:	hp	1
Primary Fuel Type: Diesel					_
Secondary Fuel Type:					
Model Name and Number:	Cummins, QS	L9-G8			
Engine Type: Comp	ression Ignition				
Serial Number Tracking Table:		•			
Serial Number: TBD			Order Da	te:	TBD
Manufacturer Name:	Cummins				100
Construction/Installation Com	mencement Date:	:	5/29/20	)15	-
Operation Commencement/ S	art-up Date:	-	5/29/20		
Manufacture Date: Feb-11			-//		near .
Btu Content: 137,000	)	The second secon	Units:	BTU/gallon	
Fuel Sulfur Content: Neg			Units:	510/8411011	T
Type of Service: Other			omes.		
		J			
SCC Codes: List all Source Class	ification Code(s)	(SCC) that describe th	e processle	s) performed by	y the emission source
(e.g., 1-02-002-04).	( / /	()	e process(e	3) periornea b	y the chiission source
		20100102			
		20100102			
Potential Operating Schedule	Provide the o	perating schedule for	this emission	on unit	
Hours/day:	24	Far a string periodatic for	CI 113 CI 113310	on ant.	
Hours/year:	4320		_		
	1320		-		

Control Equipment: No	
If yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.	
Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?	
✓ Yes No	
Pollutant: NO <sub>X,</sub> CO, PM and SO <sub>2</sub>	
Proposed BACT: Emission Standards of EPA Tier 4 and NSPS IIII sulfur content in fuel limit	
*If yes, attach BACT Analysis with this application.	
Lowest Ashiovable Emission Pate / AER), Wee a LAER Analysis according to	
Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?  Yes  No	
Pollutant:	
Proposed LAER:	
*If yes, attach LAER Analysis with this application.	
Federal and State Rule Applicability:	
New Source Performance Standards (NSPS): Not Affected	
New Source Performance Standard are listed under 40 CFR 60-	
Standards of Performance for New Stationary Sources.	
NSPS Subpart:	
Notice In the Control of the Control	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):  Not Affected	
National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 C	FR 61.
(These include asbestos, benzene, beryllium, mercury, and vinyl chloride). Part 61 NESHAP Subpart:	
Ture of the state	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):	1
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)	
standards are listed under 40 CFR 63	
Part 63 NESHAP Subpart:	
Prevention of Significant Deterioration (PSD):  Not Affected	
These rules are found under WAQSR Chapter 6, Section 4.	
Non-Attainment New Source Review: Not Affected	
These rules are found under WAQSR Chapter 6, Section 13.	

Company Equipment ID: Fuel Tank 1	
Company Equipment Description: Diesel storage tank - Dedicated to Gen 1 (129 kW)	
Operating Status: Operating	
Initial Construction Commencement Date: 5/29/2015	
Initial Operation Commencement Date: 5/29/2015	
Most Recent Construction/ Modification	
Commencement Date: N/A	
Most Recent Operation Commencement Date: N/A	
Select reason(s) for this emissions unit being included in this application (must be completed regard	ess of date of
installation or modification):	out of date of
Reason: Construction (Greenfield/New Facility)	
If reason is Reconstruction or Temporary Permit or Other, please explain below:	
Material Type: Liquid  Description of Material Stored: Diesel Fuel	
Capacity: 2500 Units: gallons	
Maximum Throughput: 36,720 Units: gallons/	
Maximum Hourly Throughput: 6.2 Units: gallons/	hr
Is Tank Heated?: No	
SCC Codes: List all Source Classification Code(s) (SCC) that describe the process(es) performed by the e source (e.g., 1-02-002-04).	mission
40400316	
40400310	
Potential Operating Schedule: Provide the operating schedule for this emission unit.	
Hours/day: 24	
Hours/year: 4,320	

Control Ec	quipment:	No						
If yes, plea	ase fill out	and attach t	he appropri	ate Control	l Device and R	elease Poin	t Informatio	on worksheets.
Best Avail	able Contro	ol Technolog	y (BACT): V	Vas a BACT	Analysis comp	oleted for th	is emission	unit?
	Yes		1	No				
Pollutant:	N/A							
Proposed	BACT:	N/A						
*If yes, att	ach BACT A	Analysis with	this applica	tion.				
Lowest Ac	hievable Ei	mission Rate	(LAER): Wa	as a LAER A	nalysis comple	eted for this	emission u	nit?
	Yes			No	,			THE.
Pollutant:	N/A							
Proposed I	LAER:	N/A						
*If yes, att	ach LAER A	nalysis with	this applicat	ion.				
Federal an	d State Ru	le Applicabil	itv:					
		ance Standar			Not Affects	od	1	
				d are listed	under 40 CFR		1	
		of Performa				00-		
	NSPS Subj				, , , , , , , , , , , , , , , , , , , ,			
National Ei					s (NESHAP Par			Not Affected
	National E	missions Sta	andards for I	Hazardous	Air Pollutants	(NESHAP I	Part 61) are	listed under 40 CFR
				ene, berylli	ium, mercury, a	and vinyl ch	loride).	
	Part 61 NE	ESHAP Subpa	irt:					
National Fr	mission Sta	ndards for U	azardous Ai	c Dollutante	s (NESHAP Par	+ C2)		
ivational Li								Not Affected
	standards	are listed un	ndards for H	azardous A	Air Pollutants (i	NESHAP P	art 63)	
		ESHAP Subpa		03				
	rait 03 NE	.snar subpa	11.					
Prevention	of Significa	ant Deteriora	ation (PSD):		Not Affects			1
	These rule	s are found	under WAQ	SR Chapte	r 6, Section 4.			J
Non-Attain	ment New	Source Revie	ew:	Not Affe	cted		1	
					r 6, Section 13	3	1	
			The state of the s	1000	,	-		

Company Equipment ID: Fuel Tank 2					
Company Equipment Description:	Diesel storage tank - Dedicated to Gen 2 to Gen 5 (234 kW)				
Operating Status: Operating					
Initial Construction Commencement Date:	5/29/2015		_		
Initial Operation Commencement Date:	5/29/2015				
Most Recent Construction/ Modification			_		
Commencement Date:	N/A		_		
Most Recent Operation Commencement Date:	N/A				
Select reason(s) for this emissions unit being in	ncluded in this application (mu	st be complete	ed regardless of date of		
installation or modification):		•	g		
Reason: Construction (Greenfield	/New Facility)				
If reason is Reconstruction or Temporary Perm	it or Other, please explain bel	ow:			
	100 - 100 -				
Material Type: Liquid					
Description of Material Stored:	Diesel Fuel				
Capacity: 2500	Units: gallons				
Maximum Throughput: 66,528		Units:	gallons/yr		
Maximum Hourly Throughput: 11.3		Units:	gallons/hr		
Is Tank Heated?: No			0 ,		
SCC Codes: List all Source Classification Code(s)	(SCC) that describe the process	s(es) performed	d by the emission		
source (e.g., 1-02-002-04).	se (i) Maria (in the contract of the contract	• • • • • • • • • • • • • • • • • • • •	to some contract and the contract of		
	40400316				
Potential Operating Schedule: Provide the o	perating schedule for this emis	ssion unit.			
Hours/day: 24					
Hours/year: 4,320					

Control Equ	uipment:	No	1				
If yes, pleas	se fill out	and attach	the appropri	iate Control	Device and Rele	ase Point Informa	tion worksheets.
Best Availa	ble Contr	ol Technolo	gy (BACT): \	Was a BACT	Analysis complet	ted for this emissic	on unit?
	Yes		1	No			
Pollutant:	N/A						
Proposed B		N/A					
*If yes, atta	ich BACT	Analysis wit	h this applica	ition.			
Lowest Ach	ievable E	mission Rat	te (LAER): W	as a LAER A	nalysis complete	d for this emission	unit?
	Yes			No			
Pollutant:							
Proposed L		N/A					
*If yes, atta	ch LAER A	nalysis with	n this applica	tion.			
Federal and							
			ards (NSPS):		Not Affected		
					under 40 CFR 60-	-	
	Standards	of Perform	nance for Nev	v Stationary	Sources.		
	NSPS Sub	part:					
					(NESHAP Part 63		Not Affected
	National E	Emissions S	tandards for	Hazardous .	Air Pollutants (N	ESHAP Part 61) ai	re listed under 40 CFR
)	61. (Thes	e include as	sbestos, benz	zene, beryllit	um, mercury, and	d vinyl chloride).	
	Part 61 NI	ESHAP Subp	art:	-		***	
Ni-a'l E							
					(NESHAP Part 63		Not Affected
	National E	Emission Sta	andards for H	łazardous A	ir Pollutants (NE	SHAP Part 63)	
			ınder 40 CFF	? 63			
	Part 63 NE	ESHAP Subp	art:				
Provention (	of Signific	ant Dotorio	ration (PSD):		N-+ ACC		
					Not Affected		
	THESE TUR	s are round	under WAQ	or Unaptei	6, Section 4.		
Non-Attainr	nent New	Source Rev	riew:	Not Affec	ted		
					6, Section 13.		
				The second secon			

Company Equipment ID:	Fuel Tank 3					
Company Equipment Description:		Diesel storage tank - Dedicated to Gen 6 to Gen 8 (234 kW)				
Operating Status: Oper						
Initial Construction Commer		5/2	29/2015			
Initial Operation Commence		5/2	29/2015			
Most Recent Construction/	Modification					
Commencement Date:			N/A			
Most Recent Operation Com	mencement Date:		N/A			
Select reason(s) for this emi	issions unit being i	ncluded in this applica	ation (must l	be complet	— ted regardless of date of	
installation or modification	):				and an area of date of	
Reason: Cons	truction (Greenfield	d/New Facility)				
If reason is <i>Reconstruction</i> of	or <b>Temporary Perm</b>	nit or Other, please ex	xplain below	:		
		20.0				
Material Type: Liquid						
Description of Material Store	ed:	Diesel Fuel				
Capacity: 2500		_ Units:	gallons			
Maximum Throughput:	66,258			Units:	gallons/yr	
Maximum Hourly Throughpu	ıt: 11.2			Units:	gallons/hr	
Is Tank Heated?: No						
SCC Codes: List all Source Cla	assification Code(s)	(SCC) that describe th	e process(es	) performe	ed by the emission	
source (e.g., 1-02-002-04).					,	
		40400316				
Potential Operating Schedu	le: Provide the o	perating schedule for	this emissio	n unit.		
Hours/day:	24					
Hours/year:	4,320					

Control Equipment: No	
If yes, please fill out and attach the appropriate Control Device and Release Point Information	on worksheets.
Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission	unit?
☐ Yes ✓ No	
Pollutant: N/A	
Proposed BACT: N/A	
*If yes, attach BACT Analysis with this application.	
Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission un	nit?
☐ Yes ☐ No	
Pollutant: N/A	
Proposed LAER: N/A	
*If yes, attach LAER Analysis with this application.	
Fall of the Pall o	
Federal and State Rule Applicability:	
New Source Performance Standards (NSPS):  Not Affected	
New Source Performance Standard are listed under 40 CFR 60-	
Standards of Performance for New Stationary Sources.	
NSPS Subpart:	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):	NI-+ ACC I
	Not Affected
National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).	listed under 40 CFR
Part 61 NESHAP Subpart:	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):	Not Affected
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)	Not Arrected
standards are listed under 40 CFR 63	
Part 63 NESHAP Subpart:	
Prevention of Significant Deterioration (PSD):  Not Affected	
These rules are found under WAQSR Chapter 6, Section 4.	1
Non-Attainment New Source Review: Not Affected	
These rules are found under WAQSR Chapter 6, Section 13.	

Company Equipment ID: Fuel Tank 4	1			
Company Equipment Description:	Diesel storage tank -	Dedicated t	o Gen 9 to	Gen 11 (323 kW)
Operating Status: Operating				
Initial Construction Commencement Date:	5/2	9/2015		
Initial Operation Commencement Date:	5/2	9/2015		
Most Recent Construction/ Modification				
Commencement Date:		N/A		
Most Recent Operation Commencement Date	2:	N/A		
Select reason(s) for this emissions unit being			be comple	— ted regardless of date of
installation or modification):				our regardiess of date of
Reason: Construction (Greenfie	eld/New Facility)			
If reason is Reconstruction or Temporary Per	mit or Other please ev	nlain halow		
	me of other, picase ca	piani below	•	
Material Type: Liquid				
Description of Material Stored:	Diesel Fuel			
2 seemption of material stored.	Dieser ruei			
Capacity: 2500	Units:	gallons	Т	
Maximum Throughput: 93,312		gallons		11
Maximum Hourly Throughput: 15.8		_	Units:	gallons/yr
Is Tank Heated?: No			Units:	gallons/hr
is fally fleated!.				
	1 (222)		AC	
SCC Codes: List all Source Classification Code(s	s) (SCC) that describe the	e process(es	s) performe	ed by the emission
source (e.g., 1-02-002-04).				
	40400316			
B				
	operating schedule for	this emissic	n unit.	
Hours/day: 24				
Hours/year: 4320				

Control Equipment: No	
If yes, please fill out and attach the appropriate Control Device and Release Point Informati	on worksheets.
Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission	unit?
☐ Yes ✓ No	
Pollutant: N/A	
Proposed BACT: N/A	
*If yes, attach BACT Analysis with this application.	
Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission u	ınit?
☐ Yes ✓ No	
Pollutant: N/A	
Proposed LAER: N/A	
*If yes, attach LAER Analysis with this application.	
Federal and State Rule Applicability:	
New Source Performance Standards (NSPS): Not Affected	
New Source Performance Standard are listed under 40 CFR 60-	
Standards of Performance for New Stationary Sources.	
NSPS Subpart:	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):	Not Affected
National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are	listed under 40 CFR
61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).	
Part 61 NESHAP Subpart:	
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):	Not Affected
National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)	
standards are listed under 40 CFR 63	
Part 63 NESHAP Subpart:	
	-
Prevention of Significant Deterioration (PSD):  Not Affected	
These rules are found under WAQSR Chapter 6, Section 4.	
No. Allei Allei	
Non-Attainment New Source Review: Not Affected	
These rules are found under WAQSR Chapter 6, Section 13.	

GEN-1

**Emissions Information-** The following tables request information needed to determine the applicable requirements and the compliance status of this emission unit with those requirements.

Efficiency Standards Pre-Controlled Potential Potential Potential Potential Emissions to Emit to Emit to Emit Basis for (tons/yr) (PTE) Units (lbs/hr) (tons/yr) Determination Criteria Pollutants: 1.) 0.01 0.020 g/kW-hr 0.01 0.01 Other Particulate emissions (PE/PM) (formerly particulate matter, PM) 2.) 0.01 0.020 g/kW-hr 0.01 0.01 Other PM #10 microns in diameter (PE/PM10) 3.) 0.01 0.020 g/kW-hr 0.01 0.01 Other PM #2.5 microns in . diameter (PE/PM2.5) Sulfur dioxide (SO2) 0.77 2.05E-03 lb/hp-hr 0.35 0.77 AP-42 5.) Nitrogen Oxides 1.23 2.00 g/kW-hr 0.57 1.23 Other (NOx) 6.) Carbon monoxide 2.15 3.50 g/kW-hr 2.15 1.00 Other (CO) 7.) Volatile organic 0.94 0.36 lb/MMBtu 0.44 0.94 AP-42 compounds (VOC) 8.) Lead (Pb) 9.) Total Hazardous Air 0.01 < 0.01 0.01 AP-42 Pollutants (HAPs) 10.) Fluoride (F) 11.) Hydrogen Sulfide (H2S) 12.) Mercury (Hg) 13.) Total Reduced Sulfur (TRS) 14.) Sulfuric Acid Mist (SAM)

g/kW-hr

<sup>\*</sup>Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.

			Effici	ency Standards			
			Potential to Emit (PTE)	Units	Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
ollutants	<u> </u>						
1.)	Benzene	<0.01	9.33E-04	lb/MMBtu	<0.01	<0.01	AP-42
2.)	Toluene	<0.01	4.09E-04	lb/MMBtu	<0.01	<0.01	AP-42
3.)	Xylene	<0.01	2.85E-04	lb/MMBtu	<0.01	<0.01	AP-42
4.)	1,3-Butadiene	<0.01	3.91E-05	lb/MMBtu	<0.01	<0.01	AP-42
5.)	Formaldehyde	<0.01	1.18E-03	lb/MMBtu	<0.01	<0.01	AP-42
6.)	Acetaldehyde	<0.01	7.67E-04	lb/MMBtu	<0.01	<0.01	AP-42
7.)	Acrolein	<0.01	9.25E-05	lb/MMBtu	<0.01	<0.01	AP-42
8.)	Total PAH	<0.01	1.68E-04	lb/MMBtu	<0.01	<0.01	AP-42

		Efficien	cy Standards			
	Pre-Controlled	Potential		Potential	Potential	T
	Potential Emissions	to Emit		to Emit	to Emit	Basis for
	(tons/yr)	(PTE)	Units	(lbs/hr)	(tons/yr)	Determination
Pollutants:						
1.)					T	T
2.)						
3.)						
4.)					1	
5.)					<del> </del>	-
6.)					-	
7.)					-	
8.)					-	

GEN-2 - GEN-8

**Emissions Information-** The following tables request information needed to determine the applicable requirements and the compliance status of this emission <u>unit with those requirements.</u>

	The state of the s		The street circu	e regainements.			
			Efficie	ency Standards			
		Pre-Controlled	Potential		Potential	Potential	1
		Potential Emissions	to Emit		to Emit	to Emit	Basis for
		(tons/yr)	(PTE)	Units	(lbs/hr)	(tons/yr)	Determination
eria Po	ollutants:						Determination
1.	)	0.16	0.020	g/kW-hr	0.07	0.16	Other
	Particulate emissions			g,	0.07	0.10	Other
	(PE/PM) (formerly	1					
	particulate matter,						
	PM)						
2.		0.16	0.020	g/kW-hr	0.07	0.16	Other
	PM #10 microns in			6/ 111	0.07	0.10	Other
	diameter (PE/PM10)						
3.)		0.16	0.020	g/kW-hr	0.07	0.16	Other
	PM #2.5 microns in			<i>Si</i>	0.07	0.10	Other
	diameter (PE/PM2.5)						
4.)	Sulfur dioxide (SO2)	9.73	2.05E-03	lb/hp-hr	4.51	9.73	AP-42
5.)	Nitrogen Oxides	15.60	2.00	g/kW-hr	7.22	15.60	Other
	(NOx)			G <sub>i</sub> ·····	7.22	13.00	Other
6.)	Carbon monoxide	27.30	3.50	g/kW-hr	12.64	27.30	Other
	(CO)			C,		27.00	Other
7.)	Volatile organic	11.96	0.36	lb/MMBtu	5.54	11.96	AP-42
	compounds (VOC)			,	0.0	11.50	A1-42
8.)	Lead (Pb)					<del>                                     </del>	
9.)	Total Hazardous Air	0.13			0.06	0.13	
	Pollutants (HAPs)						AP-42
10.)	Fluoride (F)					<u> </u>	
11.)	Hydrogen Sulfide					1	
	(H2S)						
12.)	Mercury (Hg)						
13.)	Total Reduced Sulfur					<b>—</b>	
	(TRS)						
14.)	Sulfuric Acid Mist						
	(SAM)				1		

<sup>\*</sup>Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.

			Efficie	ency Standards			
		Pre-Controlled Potential Emissions (tons/yr)	Potential to Emit (PTE)	Units	Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
llutants					-		
1.)	Benzene	0.03	9.33E-04	lb/MMBtu	0.01	0.03	AP-42
2.)	Toluene	0.01	4.09E-04	lb/MMBtu	<0.01	0.01	AP-42
3.)	Xylene	<0.01	2.85E-04	lb/MMBtu	<0.01	<0.01	AP-42
4.)	1,3-Butadiene	<0.01	3.91E-05	lb/MMBtu	<0.01	<0.01	AP-42
5.)	Formaldehyde	0.04	1.18E-03	lb/MMBtu	0.02	0.04	AP-42
6.)	Acetaldehyde	0.03	7.67E-04	lb/MMBtu	0.01	0.03	AP-42
7.)	Acrolein	<0.01	9.25E-05	lb/MMBtu	<0.01	<0.01	AP-42
8.)	Total PAH	<0.01	1.68E-04	lb/MMBtu	<0.01	<0.01	AP-42

				_		
		Efficien	Efficiency Standards			
	Potential Emissions	Potential to Emit (PTE)	Units	Potential to Emit (Ibs/hr)	Potential to Emit (tons/yr)	Basis for Determination
Pollutants:						- delimination
1.)		T			T	
2.)						
3.)						
4.)					-	
5.)						
6.)					<del>                                     </del>	
7.)					-	
8.)					-	

GEN-9 - GEN-11

**Emissions Information**- The following tables request information needed to determine the applicable requirements and the compliance status of this emission unit with those requirements.

Efficiency Standards Pre-Controlled Potential Potential Potential Potential Emissions to Emit to Emit to Emit Basis for (tons/yr) (PTE) (lbs/hr) Units (tons/yr) Determination Criteria Pollutants: 1.) 0.09 0.020 g/kW-hr 0.04 0.09 Other Particulate emissions (PE/PM) (formerly particulate matter, PM) 2.) 0.09 0.020 g/kW-hr 0.04 0.09 Other PM #10 microns in diameter (PE/PM10) 3.) 0.09 0.020 g/kW-hr 0.04 0.09 Other PM #2.5 microns in diameter (PE/PM2.5) 4.) Sulfur dioxide (SO2) 5.75 2.05E-03 lb/hp-hr 2.66 5.75 AP-42 5.) Nitrogen Oxides 9.23 2.00 g/kW-hr 4.27 9.23 Other (NOx) 6.) Carbon monoxide 16.15 3.50 g/kW-hr 7.48 16.15 Other (CO) 7.) Volatile organic 7.07 0.36 lb/MMBtu 3.27 7.07 AP-42 compounds (VOC) 8.) Lead (Pb) 9.) Total Hazardous Air 0.08 0.04 0.08 AP-42 Pollutants (HAPs) 10.) Fluoride (F) 11.) Hydrogen Sulfide (H2S) 12.) Mercury (Hg) 13.) Total Reduced Sulfur (TRS) 14.) Sulfuric Acid Mist (SAM)

<sup>\*</sup>Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.

			Effici	ency Standards			
		Pre-Controlled	Potential		Potential	Potential	Basis for
		Potential Emissions	to Emit	j.	to Emit	to Emit	
		(tons/yr)	(PTE)	Units	(lbs/hr)	(tons/yr)	Determination
ollutants	:						
1.)	Benzene	0.02	9.33E-04	lb/MMBtu	<0.01	0.02	AP-42
2.)	Toluene	<0.01	4.09E-04	lb/MMBtu	<0.01	<0.01	AP-42
3.)	Xylene	<0.01	2.85E-04	lb/MMBtu	<0.01	<0.01	AP-42
4.)	1,3-Butadiene	<0.01	3.91E-05	lb/MMBtu	<0.01	<0.01	AP-42
5.)	Formaldehyde	0.02	1.18E-03	lb/MMBtu	0.01	0.02	AP-42
6.)	Acetaldehyde	0.02	7.67E-04	lb/MMBtu	<0.01	0.02	AP-42
7.)	Acrolein	<0.01	9.25E-05	lb/MMBtu	<0.01	<0.01	AP-42
8.)	Total PAH	<0.01	1.68E-04	lb/MMBtu	<0.01	<0.01	AP-42

		Efficien	au Chanalanda			
		the same of the sa	cy Standards			
	Pre-Controlled	Potential		Potential	Potential	
	Potential Emissions	to Emit		to Emit	to Emit	Basis for
	(tons/yr)	(PTE)	Units	(lbs/hr)	(tons/yr)	Determination
ollutants:						
1.)					T	
2.)					1	
3.)					<u> </u>	
4.)					<del>                                     </del>	
5.)					1	
6.)					1	
7.)						
8.)				_	<del>                                     </del>	

Fuel Tank 1

Emissions Information- The following tables request information needed to determine the applicable

requirements and the compliance status of this emission unit with those requirements.

			Effici	iency Standards			
		Pre-Controlled	Potential		Potential	Potential	T
		Potential Emissions	to Emit		to Emit	to Emit	Basis for
		(tons/yr)	(PTE)	Units	(lbs/hr)	(tons/yr)	
iteria Pol	llutants:	(	(0.12)	Offics	(103/111)	(toris/yr)	Determination
1.)			T			T	
100.00	Particulate emissions		1 1				
	(PE/PM) (formerly						
	particulate matter,						
	PM)						
2.)	PIVI)						
- 0	DN 4 #1 0 ' '						
- 1	PM #10 microns in						
	diameter (PE/PM10)						
3.)							
	PM #2.5 microns in						
	diameter (PE/PM2.5)						
	Sulfur dioxide (SO2)						
5.)	Nitrogen Oxides						
	(NOx)						
6.)	Carbon monoxide						
	(CO)						
7.)	Volatile organic	4.15E-04			9.47E-05	4.15E-04	Taraban
	compounds (VOC)		1 1		3.472-03	4.136-04	Tanks Prograr
	Lead (Pb)				_	-	
	Total Hazardous Air	4.15E-04			9.47E-05	4.15E-04	
	Pollutants (HAPs)				3.4/E-US	4.15E-04	Tanks Progran
	Fluoride (F)						
	Hydrogen Sulfide						
	(H2S)						
	Mercury (Hg)						
	Total Reduced Sulfur						
63.	(TRS)						
	Sulfuric Acid Mist						
	(SAM)						

<sup>\*</sup>Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.

		Efficier	icy Standards			
	Pre-Controlled	Potential		Potential	Potential	
	Potential Emissions	to Emit		to Emit	to Emit	Basis for
- "	(tons/yr)	(PTE)	Units	(lbs/hr)	(tons/yr)	Determination
Pollutants:						
1.)						
2.)			-		-	
3.)						
4.)						
5.)						
6.)						
7.)						
8.)						

		Efficien	cy Standards			
	Pre-Controlled	Potential		Potential	Potential	1
	Potential Emissions	to Emit		to Emit	to Emit	Basis for
	(tons/yr)	(PTE)	Units	(lbs/hr)	(tons/yr)	Determination
Pollutants:					1	1
1.)					T	
2.)						
3.)						
4.)					+	
5.)					-	
6.)						
7.)					-	
8.)					-	

Fuel Tank 2

Emissions Information- The following tables request information needed to determine the applicable

requirements and the compliance status of this emission unit with those requirements.

	and the compliance		The second secon	ciency Standards	7		
		Pre-Controlled	Potential		Potential	Potential	1
		Potential Emissions	to Emit		to Emit	to Emit	Basis for
		(tons/yr)	(PTE)	Units	(lbs/hr)	(tons/yr)	
riteria Po	ollutants:			Offics	(103/111)	((0113/ )11)	Determination
1.	)		T		Т	Т	1
	Particulate emissions				1		
	(PE/PM) (formerly						
	particulate matter,						
	PM)						
2.							
	PM #10 microns in						
	diameter (PE/PM10)						
3.						-	
	PM #2.5 microns in					1	
	diameter (PE/PM2.5)						
4.			-			-	
	Nitrogen Oxides		_				
0.,	(NOx)						
6.1	Carbon monoxide					-	
0.,	(CO)					į	
7.)	Volatile organic	6.10E-04			4.205.04		
1.37	compounds (VOC)	0.101-04			1.39E-04	6.10E-04	Tanks Program
8.)	Lead (Pb)						
	Total Hazardous Air	6.10E-04			4.005.01		
0.,	Pollutants (HAPs)	0.101-04			1.39E-04	6.10E-04	Tanks Program
10.)	Fluoride (F)				-		- 3
	Hydrogen Sulfide						
,	(H2S)						
12.)	Mercury (Hg)				-		
	Total Reduced Sulfur						
_3.,	(TRS)						
14.)	Sulfuric Acid Mist						
,	(SAM)						
rouidou		ittachment and evolai					

<sup>\*</sup>Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.

		Efficien	icy Standards			
	Pre-Controlled Potential Emissions (tons/yr)	Potential to Emit (PTE)	Units	Potential to Emit (Ibs/hr)	Potential to Emit (tons/yr)	Basis for Determination
ollutants:						
1.)					T	
2.)						
3.)						
4.)						
5.)						
6.)						
7.)						
8.)					-	

		Efficien	cy Standards			
le llude man	Pre-Controlled Potential Emissions (tons/yr)	Potential to Emit (PTE)	Units	Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
ollutants:						
1.)						
2.)						
3.)						
4.)						
5.)						
6.)					-	
7.)					-	
8.)					-	

### Fuel Tank 3

**Emissions Information**-The following tables request information needed to determine the applicable requirements and the compliance status of this emission unit with those requirements.

**Efficiency Standards** Pre-Controlled Potential Potential Potential Potential Emissions to Emit to Emit to Emit Basis for (PTE) (tons/yr) Units (lbs/hr) (tons/yr) Determination Criteria Pollutants: 1.) Particulate emissions (PE/PM) (formerly particulate matter, PM) 2.) PM #10 microns in diameter (PE/PM10) 3.) PM #2.5 microns in diameter (PE/PM2.5) Sulfur dioxide (SO2) 5.) Nitrogen Oxides (NOx) 6.) Carbon monoxide (CO) 7.) Volatile organic 6.10E-04 1.39E-04 6.10E-04 Tanks Program compounds (VOC) 8.) Lead (Pb) 9.) Total Hazardous Air 6.10E-04 1.39E-04 6.10E-04 Tanks Program Pollutants (HAPs) 10.) Fluoride (F) 11.) Hydrogen Sulfide (H2S) 12.) Mercury (Hg) 13.) Total Reduced Sulfur (TRS) 14.) Sulfuric Acid Mist (SAM)

<sup>\*</sup>Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.

		Effici	ency Standards			
	Pre-Controlled Potential Emissions	Potential to Emit	,	Potential to Emit	Potential to Emit	Basis for
	(tons/yr)	(PTE)	Units	(lbs/hr)	(tons/yr)	Determination
Pollutants:						
1.)						
2.)						
3.)						
4.)						
5.)						
6.)						
7.)					1	
8.)						

		Efficien	cy Standards			
	Pre-Controlled	Potential		Potential	Potential	I
	Potential Emissions	to Emit		to Emit	to Emit	Basis for
	(tons/yr)	(PTE)	Units	(lbs/hr)	(tons/yr)	Determination
Pollutants:						
1.)						
2.)						
3.)						
4.)						
5.)						
6.)					<del> </del>	
7.)						
8.)						<del> </del>

Fuel Tank 4

**Emissions Information**- The following tables request information needed to determine the applicable requirements and the compliance status of this emission unit with those requirements.

	The second secon		THE R. P. LEWIS CO., LANSING, MICHIGAN, PRINCIPLE SPINISHED, P. LEWIS CO., LANSING, MICHIGAN, PRINCIPLE SPINISHED,	The state of the s	7		
		Due Controlled		ciency Standards		1-	
		Pre-Controlled	Potential		Potential	Potential	
		Potential Emissions	to Emit		to Emit	to Emit	Basis for
007 0 007	227 0	(tons/yr)	(PTE)	Units	(lbs/hr)	(tons/yr)	Determination
	llutants:						
1.)	1						
	Particulate emissions						-
	(PE/PM) (formerly						
	particulate matter,						
	PM)						
2.)							
	PM #10 microns in						
	diameter (PE/PM10)						
3.)							
	PM #2.5 microns in						
	diameter (PE/PM2.5)						
4.)	Sulfur dioxide (SO2)				<del></del>	1	
5.)	Nitrogen Oxides						
	(NOx)						
6.)	Carbon monoxide					-	
	(CO)						
7.)	Volatile organic	7.70E-04			1.76E-04	7.70E-04	Tanks Program
,	compounds (VOC)				1.702-04	7.70L-04	Tanks Program
8.)	Lead (Pb)						
	Total Hazardous Air	7.70E-04			1.76E-04	7.70E-04	
,	Pollutants (HAPs)	7.702 04			1.766-04	7.70E-04	Tanks Program
10.)	Fluoride (F)				-	-	
	Hydrogen Sulfide				-	-	
	(H2S)						
12.)	Mercury (Hg)				+		
	Total Reduced Sulfur					-	
23.7	(TRS)						
14.)	Sulfuric Acid Mist				1	1	
	(SAM)						

<sup>\*</sup>Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.

		Effici	ency Standards			
	Pre-Controlled	Potential		Potential	Potential	T
	Potential Emissions	to Emit		to Emit	to Emit	Basis for
	(tons/yr)	(PTE)	Units	(lbs/hr)	(tons/yr)	Determination
Pollutants:						
1.)						
2.)						
3.)						
4.)						
5.)						
6.)						
7.)					1	
8.)						

		Efficien	cy Standards			
	Pre-Controlled	Potential		Potential	Potential	
	Potential Emissions	to Emit		to Emit	to Emit	Basis for
	(tons/yr)	(PTE)	Units	(lbs/hr)	(tons/yr)	Determination
Pollutants:						
1.)					T	
2.)						
3.)						
4.)						
5.)						
6.)						
7.)					1	
8.)					1	

### Release Point Information:

Complete the table below for *each* release point. Please include release point information for each emission unit. Multiple attachments may be necessary. A release point is a point at which emissions from an emission unit are released into the ambient (outside)air. List each individual release point on a separate pair of lines (release point ID and description). For longitude and latitude, use NAD 83/WGS84 datum and 5 digits after the decimal (i.e. 41.12345, -107.56789)

	Stack Release Point Information
Company Release Point ID:	Release Point Type:   Vertical
Gen 1	Release Point Latitude: 44.7015
	Release Point Longitude: -104.20328
Company Release Point Description:	Base Elevation (ft): 3,743
	Stack Height (ft): 8
	Stack Diameter (ft): 0.5
	Exit Gas Velocity (ft/s): 23
	Exit Gas Temp (F): 906
	Exit Gas Flow Rate (acfm): 270
Company Release Point ID:	Release Point Type: Vertical
Gen 2 - Gen 8	Release Point Latitude: 44.7015
	Release Point Longitude: -104.20328
Company Release Point Description:	Base Elevation (ft): 3,743
	Stack Height (ft): 8
	Stack Diameter (ft): 0.5
	Exit Gas Velocity (ft/s): 40
	Exit Gas Temp (F): 973
	Exit Gas Flow Rate (acfm): 470
Company Release Point ID:	Release Point Type: Vertical
Gen 9 - Gen 11	Release Point Latitude: 44.7015
	Release Point Longitude: -104.20328
Company Release Point Description:	Base Elevation (ft): 3,743
	Stack Height (ft): 8
	Stack Diameter (ft): 0.5
	Exit Gas Velocity (ft/s): 56
	Exit Gas Temp (F): 974
	Exit Gas Flow Rate (acfm): 663
Company Release Point ID:	Release Point Type: Vertical
Fuel tank 1- Fuel tank 4	Release Point Latitude: 44.7015
	Release Point Longitude: -104.20328
Company Release Point Description:	Base Elevation (ft): 3,743
	Stack Height (ft): 8
	Stack Diameter (ft):
	Exit Gas Velocity (ft/s):
	Exit Gas Temp (F):
	Exit Gas Flow Rate (acfm):
Company Release Point ID:	Release Point Type: Vertical
	Release Point Latitude:
	Release Point Longitude:
Company Release Point Description:	Base Elevation (ft):
	Stack Height (ft):
	Stack Diameter (ft):
	Exit Gas Velocity (ft/s):
	Exit Gas Temp (F):
	Exit Gas Flow Rate (acfm):

# APPENDIX A: MANUFACTURER SPECIFICATION SHEETS



### Cummins Inc.

Columbus, Indiana 47202-3005

### **EXHAUST EMISSIONS DATA SHEET**

Basic Engine Model: QSB5-G9

Curve Number: FR93968

G-DRIVE **QSB** 1

Engine Critical Parts List: CPL: 3962

01 AUG 12

Compression Ratio: 17.2:1

Displacement: 272 in<sup>3</sup> (4.5 L)

Fuel System: Bosch HPCR

Aspiration: Turbocharged and Charge Air Cooled and EGR

Emission Certification: U.S. EPA Tier 4(i), CARB Tier 4(i), EU Stage IIIA

Engine Speed	gine Speed Standby Power		Prime	Prime Power		Continuous Power	
RPM	kWm	hp	kWm	hp	kWm	hp	
1500	116	156	101	135	90	121	
1800	129	173	116	156	105	141	

### US EPA/CARB

This engine, tested in accordance with 40 CFR 1065, is in compliance with the US EPA Nonroad Tier 4(i) regulations:

	Component	g/hp-hr	g/kW-hr	
NO <sub>x</sub>	(Oxides of Nitrogen )	1.5	2.0	-
НС	(Hydrocarbons)	0.14	0.19	
co	(Carbon Monoxide)	2.61	3.5	
PM	(Particulate Matter)	0.015	0.02	

### **Test Methods and Conditions:**

Tests to demonstrate compliance with the regulated levels shown above were conducted per 40CFR1065 (ref. ISO8178-1) and weighted at load points prescribed in Subpart E, Appendix A for Constant Speed Engines. (ref.ISO8178-4,D2).

### Fuel Specifications:

40-48 Cetane Number, 0.015 MAX Wt.% Sulfur; Reference ISO8178-5, 40CFR86, 1313-98 Type 2-D and ASTM D975 No. 2 D.

25°C (77°F) Air Inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H2O/lb) of dry air Humidity (required for NOx correction): Intake Restriction set to maximum allowable limit for clean filler; Exhaust Back Pressure set to maximum allowable limit.

### EU NRMM (1500/1800 RPM)

This engine, tested in accordance with directive 97/68/EC, is in compliance with the EU NRMM Stage III A regulations.

	Component	g/hp-hr	g/kW-hr
NO <sub>x</sub> + HC	(Oxides of Nitrogen + Hydrocarbons)	3.0	4.0
со	(Carbon Monoxide)	2.6	3.5
PM	(Particulate Matter)	0.15	0.20

Test Methods and Conditions:
Tests to demonstrate compliance with the regulated levels shown above were conducted per 97/68/EC (ref ISO8178-1) and weighted at load points prescribed in 97/68/EC Annex 3, "test procedures". (ref. ISO8178-4, D2).

### Fuel Specifications:

52-54 Celane Number, 15 PPM Max Sulfur, as referenced by directive 97/68/EC.

25°C (77°F) Air Inlet Tomperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H2O/lb) of dry air Humidity (required for NOx correction): Inlake Restriction set to maximum allowable limit for clean filter; Exhaust Back Pressure set to maximum allowable limit.



### Cummins Inc.

Columbus, Indiana 47202-3005

### **EXHAUST EMISSIONS DATA SHEET**

Basic Engine Model: QSB7-G6

Curve Number: FR92857 Date:

G-DRIVE QSB 1

Engine Critical Parts List: CPL: 3277

25 FEB 11

Compression Ratio: 17.3:1

Displacement: 409 in3 (6.7 L)

Fuel System: Bosch HPCR

Aspiration: Turbocharged and Charge Air Cooled and EGR

Emission Certification: U.S. EPA Tier 4(i), CARB Tier 4(i), EU Stage IIIA

Engine Speed	Standby	Power	Prime	Power	Continuo	us Power
RPM	kWm	hp	kWm	hp	kWm	hp
1500	204	274	185	248	167	224
1800	234	314	210	282	189	254

### US EPA/CARB

This engine, tested in accordance with 40 CFR 1065, is in compliance with the US EPA Nonroad Tier 4(i) regulations:

		Component	g/hp-hr	g/kW-hr	
,	NO <sub>x</sub>	(Oxides of Nitrogen )	1.5	2.0	
	HC	(Hydrocarbons)	0.14	0.19	
	co	(Carbon Monoxide)	2.61	3.5	
	PM	(Particulate Matter)	0.015	0.02	

### Test Methods and Conditions:

Tests to demonstrate compliance with the regulated lavels shown above were conducted per 40CFR1065 (ref. ISO8178-1) and weighted at load points prescribed in Subpart E, Appendix A for Constant

### Fuel Specifications:

40-48 Cetane Number, 0 015 MAX Wt. % Sulfur; Reference ISO8178-5, 40CFR86, 1313-98 Type 2-D and ASTM D975 No. 2 D.

Reference:
25°C (77°F) Air Inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H2O/lb) of dry air Humidity (required for NOx correction): Intake Restriction set to maximum allowable limit, for clean filter; Exhaust Back Pressure set to maximum allowable limit.

### TA Luft (1500/1800 RPM)

Engine Emissions at prime rating corrected to 5% O2 content, are in compliance with the following TA Luft Standards:

NOx:

2000 mg/nm<sup>3</sup>

NMHC:

150 mg/nm<sup>3</sup>

CO:

650 mg/nm<sup>3</sup>

Particulates:

130 mg/nm<sup>3</sup>

### Test Methods and Conditions:

Steady-State emissions recorded per ISO8178-1 during operation at rated engine speed (+/-2%) and stated constant load (+/-2%) with engine temperatures, pressures and emission rates stabilized.

### Fuel Specifications:

40-48 Cetane Number, 0.03 - 0.05 Wt.% Sulfur, Reference ISO8178-5, 40CFR86, 1313-98 Type 2-D and ASTM D975 No. 2 D

25°C (77°F) Air Inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure, 10.7 g/kg (75 grains H2O/lb) of dry air Humidity (required for NOx correction): Intake Restriction set to maximum allowable limit for clean filter, Exhaust Back Pressure set to maximum allowable limit
Data was taken from a single engine test according to the test methods, fuel specification and reference conditions stated above and is subject to engine-to-engine variability. Test conducted with alternate

test methods, instrumentation, fuel or reference conditions can yield different results.

### EU NRMM (1500/1800 RPM)

This engine, tested in accordance with directive 97/68/EC, is in compliance with the EU NRMM Stage III A regulations.

	Component	g/hp-hr	g/kW-hr
NO <sub>x</sub> + HC	(Oxides of Nitrogen + Hydrocarbons)	3.0	4.0
co	(Carbon Monoxide)	2.6	3.5
PM	(Particulate Matter)	0.15	0.20

### Test Methods and Conditions:

Tests to demonstrate compliance with the regulated levels shown above were conducted per 97/68/EC (ref ISO8178-1) and weighted at load points prescribed in 97/68/EC Annex 3, "test procedures" (ref ISO8178-4, D2)

52-54 Cetane Number, 15 PPM Max Sulfur, as referenced by directive 97/68/EC

25°C (77°F) Air Inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H2O/fb) of dry air Humidity (required for NOx correction): Intake Restriction set to maximum allowable limit for clean filter, Exhaust Back Pressure set to maximum allowable limit



### Cummins Inc.

Columbus, Indiana 47202-3005

### **EXHAUST EMISSIONS DATA SHEET**

Basic Engine Model: QSL9-G8

Curve Number: FR92865 Date:

25 FEB 11

G-DRIVE QSL 1

Engine Critical Parts List: CPL: 3511

Compression Ratio: 16.6:1

Displacement: 543 in3 (8.9 L)

Fuel System: XPI

Aspiration: Turbocharged and Charge Air Cooled and EGR

Emission Certification: U.S. EPA Tier 4(i), CARB Tier 4(i), EU Stage IIIA

Engine Speed	Standby	Power	Prime	Power	Continuo	us Power
RPM	kWm	НР	kWm	HP	ƙWm	HP
1500	276	370	251	336	226	303
1800	323	433	293	393	264	354

### US EPA/CARB

This engine, tested in accordance with 40 CFR 1065, is in compliance with the US EPA Nonroad Tier 4(i) regulations:

		Component	g/hp-hr	g/kW-hr	
•	NOx	(Oxides of Nitrogen )	1.5	2.0	
	НС	(Hydrocarbons)	0.14	0.19	
	co	(Carbon Monoxide)	2.61	3.5	
	PM	(Particulate Matter)	0.015	0.020	

### **Test Methods and Conditions:**

Tests to demonstrate compliance with the regulated levels shown above were conducted per 40CFR89 (ref. ISO8178-1) and weighted at load points prescribed in Subpart E, Appendix A for Constant Speed Engines. (ref ISO8178-4,D2).

Fuel Specifications: 40-48 Cetane Number, 0.015 MAXWt % Sulfur, Reference ISO8178-5, 40CFR86, 1313-98 Type 2-D and ASTM D975 No. 2 D

Reference: 25°C (77°F) Air Inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H2O/lb) of dry air Humidity (required for NOx correction): Intake Restriction set to maximum allowable limit for clean filter, Exhaust Back Pressure set to maximum allowable limit

### TA Luft (1500/1800 RPM)

Engine Emissions at prime rating corrected to 5% O<sub>2</sub> content, are in compliance with the following TA Luft Standards:

NOx:

2000 mg/nm<sup>3</sup>

NMHC:

150 mg/nm<sup>3</sup>

CO:

650 mg/nm<sup>3</sup>

Particulates:

130 mg/nm<sup>3</sup>

### **Test Methods and Conditions:**

Steady-State emissions recorded per ISO8178-1 during operation at rated engine speed (+/-2%) and stated constant load (+/-2%) with engine temperatures, pressures and emission rates stabilized.

Fuel Specifications: 40-48 Cetane Number, 0 03 - 0.05 Wt,% Sulfur; Reference ISC8178-5, 40CFR86, 1313-98 Type 2-D and ASTM D975 No. 2 D.

25°C (77°F) Air Inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H2O/lb) of dry air Humidity (required for NOx correction): Intake Restriction set to maximum allowable limit Dala was taken from a single engine test according to the test methods, fuel specification and reference conditions stated above and is subject to engine-to-engine variability. Test conducted with alternate

test methods, instrumentation, fuel or reference conditions can yield different results.

### EU NRMM (1500/1800 RPM)

This engine, tested in accordance with directive 97/68/EC, is in compliance with the EU NRMM Stage III A regulations.

	Component	g/hp-hr	g/kW-hr
NO <sub>x</sub> + HC	(Oxides of Nitrogen + Hydrocarbons)	3.0	4,0
CO	(Carbon Monoxide)	2.6	3.5
PM	(Particulate Matter)	0.15	0.20

Test Methods and Conditions:
Tests to demonstrate compliance with the regulated levels shown above were conducted per 97/68/EC (ref ISO8178-1) and weighted at load points prescribed in 97/68/EC Annex 3, "test procedures" (ref ISOB178-4, D2)

### Fuel Specifications:

52-54 Cetane Number, 0 03 Max. Wt. % Sulfer, as referenced by directive 97/68/EC

25°C (77°F) Air inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure, 10.7 g/kg (75 grains H2O//b) of dry air Humidity (required for NOx correction). Intake Restriction set to maximum allowable limit for clean filter, Exhaust Back Pressure set to maximum allowable limit.

# aggreko

Date:

### TECHNICAL DOCUMENT

# DESIGN BRIEF (NON-POWER)

 Doc.No.:
 G220072

 Page:
 1 of 3

 Creator:
 A.Bretman

### 2300 US Gallon (8745 L) IMDG Transtainer Fuel Tank

Revision: A

Aggreko Part number 04-0021123 Supplier Western Western Code T10-IMDG-US Capacity 2300 US Gallon Static Fuel Storage 8745 Litres 2030 US Gallon Transportable under UN; ADR; RID; IMDG; US DoT; UIC; TIR regulations 7690 Litres 2991mm Dimensions Length 117.75" Width 96" 2438mm Height 96" 2438mm Weight **Empty** 8157 lb (approx) 3700kg (approx.) Full 22389.5 lb (approx) When capacity 2030 US Gallon 10160kg (approx.) 24200 lb (approx) When capacity 2300 US Gallon 11050kg (approx) (Laden weight of container based on diesel weight of 0.84kg/litre) Bund material 1/8" thick (nominal) 3mm thick Inner tank material 1/4" thick (minimum) 6mm thick Fill Connections 2" Fill point Feed connections 2 - off at 1" ISO female coupler c/w lockable ball valve and flex drip pipe. Non return valve and strainer Return connections 1 - off at 3/4" ISO male coupler and lockable ball valve 1 - off at 1/2" ISO male coupler and lockable ball valve Suction Feed Connection 2" Suction pipe terminating in 2"NPT nipple and cap Suction Clean Connection 2" Suction pipe terminating in 2"NPT nipple and cap for cleaning inner tank Fuel Gauge Fitted Vents Pressure vacuum and 2" vent pipe with valve Draw-off and tank clean 2" fitting C.Shrive Approved by: Approved by: Head of Engineering Director of Manufacturing 04/04/2012 Date: Date: Approved by: Approved by: Director of Product & Services Development Customer

Date:

# aggreko

Date:

### TECHNICAL DOCUMENT

# DESIGN BRIEF (NON-POWER)

 Doc.No.:
 G220072

 Page:
 2 of 3

 Creator:
 A.Bretman

# 2300 US Gallon (8745 L) IMDG Transtainer Fuel Tank

Revision: A

Priming Pump		K2 semi rotary hand pur coupler. Outlet manifold	mp c/w 1m x ¾" in fitted with 1" ISO	llet hose (suction) with 1" ISO A male A female coupler, ¾" ball valve top tank.
Overfill Preven	tion	Tank fitted with Mechan	ical Overfill Preve	ntion
Transportation		To be able to be transpo	orted with fuel. (Se	ee capacities and Design Approvals)
Stacking				and 10 high when empty with other
		2300 US Gallon Transta		
		For stacking on board co	ontainer ship Tran	stainer should be stacked no more than
Inspection acce	ess	Bolted Inspection manho	ole.	
Roof access		There is no direct acces operating practice" shou	s to the roof. If wo	orking on the roof is required then "best
Lifting	Тор	Corner twist locks (suita	ble for full load lift	
	Base	Corner twist locks (suital	ble for full load lift	)
		Fork pockets to be of clo	sed design (suita	ble for lifting empty)
Internal tank		Enclosed in steel weather designed to prevent fuel fill level.	er proof bund (clos surge and provid	sed top Dike) To include baffles e safe handling and transportation at any
Bund		To be 110% capacity of	inner tank.	
Security		Pump and tank fittings a area and are top mounte access holes enabling do	d to help prevent	ble, vented cabinet within the bunded leakage. Hoses can be fed through cked while in use
Access		Unique fold down cabine	t step for ease of	access to tank fittings and pump.
Capability		To supply fuel for genera	ator and refuel pla	nt machinery simultaneously
Paint		Painted in Cromadex pai Colour – RAL7015 (slate	int – 2 part primer grey)	and top coat non-isocyante acrylic.
		Preparation and finish to	Aggreko standar	d AS3-SP03.01
		Base on outer tank finish	ed in Bitumen.	
Approved by:	C.Shrive		Approved by:	
	Head of Enginee	ring		Director of Manufacturing
Date:	04/04/2012		Date:	
Anneau	7			
Approved by:	Director of Brad	uct & Services Development	Approved by:	
1	Director of Frod	act of Services Development	1	Customer

Date:

# aggreko

### TECHNICAL DOCUMENT

# DESIGN BRIEF (NON-POWER)

Doc.No.:	G220072	
Page:	3 of 3	
Creator:	A.Bretman	
		-

### 2300 US Gallon (8745 L) IMDG Transtainer Fuel Tank

Revision: A

Design Approvals

ISO container approved to transport fuel on road / rail under UN; ADR; RID; IMDG;

US DoT; UIC; TIR regulations

Design Standards

ADR

49CFR(T9)

UL142 / ULC142 / ULC-S601

CSC (under UL / ULC)

NFPA 30A (under UL / ULC)

IMDG with -40° inner vessel ASME CODE

RID

UIL

UN

USDoT

TIR

Container Plating

ISO container to be CSC plated

Aggreko livery

To be fitted by supplier

Aggreko Plant No.

To be welded to structure

Documentation

Full Documentation package to be delivered with each fuel tank. (Electrical Schematics, Mechanical Layout, Operations & Maintenance Manual and Spares

Listing)

Full Certification package to be delivered with each fuel tank. (Lifting, Design

Approval Certification)

Approved by:	C.Shrive	Approved by:	
	Head of Engineering		Director of Manufacturing
Date:	04/04/2012	Date:	
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Approved by:		Approved by:	
Approved by:	Director of Product & Services Development	Approved by:	Customer
Approved by:	Director of Product & Services Development	Approved by:	Customer